CONTENTS

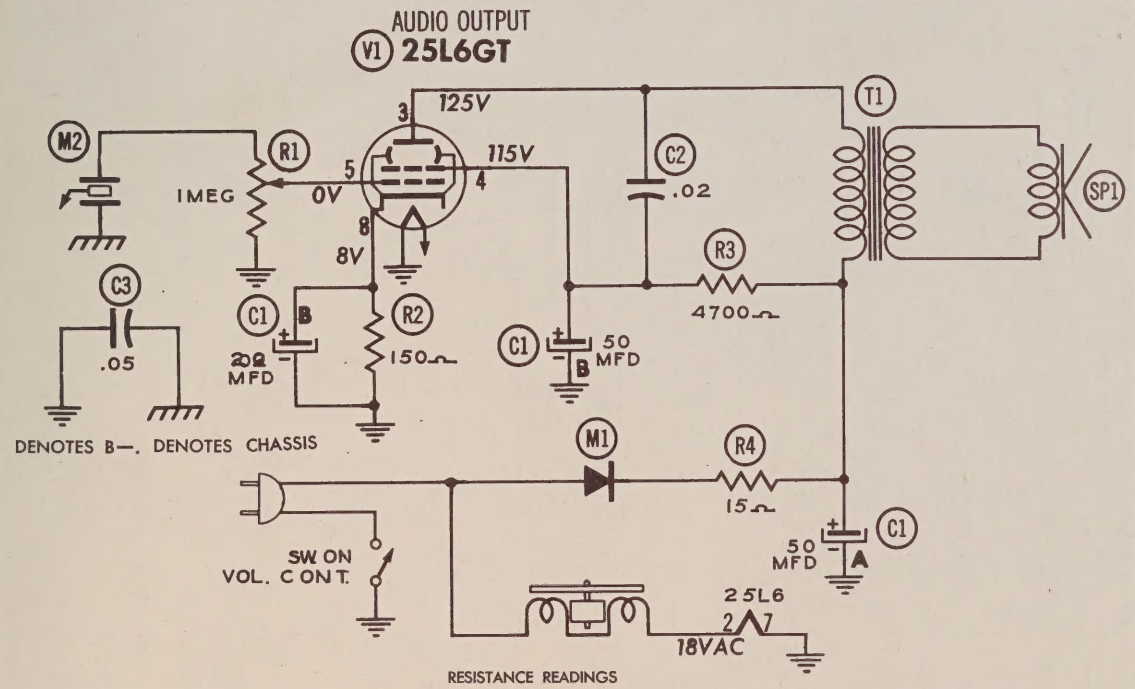
TRADE NAME	MODEL	SET AND FOLDER No.
Aircastle	472. MP25, 472. MP26	168-1
Aircastle	652.505	168-2
Airline	15GAA-995A	168-3
Andrea	C0-VL-19 (Ch. VL-19) Tel. Rec.	168-4
Arvin	657-T (Ch. RE307)	168-5
Crosley	DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM, (Ch. 356-1, 356-2) Tel. Rec.	168-6
Hallicrafters	5R24	168-7
Hoffman	20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T) Tel. Rec.	168-8
Hyde Park	MST12, MST14, 14TR, 16TR, 17CD (1st Prod.),17CRR(1st Prod.), 17ROG (1st Prod.), 20CD (1st Prod.), 20TR, 112X, 203D (1st Prod.), 312, 819, 3163CR, 8163CR, 8193CM Tel. Rec.	168-9
Magnavox	Chassis CT331 thru CT349 (105 Series) Tel. Rec.	168-10
Masco	RK-5, RK-5L, RK-5M, RK-5ML, RK-5SL	168-11
RCA Victor	PX600 (Ch. RC-1110)	168-12
Stewart-Warner	9162A, B	168-13
Zenith	J880, J880R (Ch. 8H20Z)	168-14

AIRCASTLE
MODELS 472.MP25, 472.MP26

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

AIRCASTLE
MODELS 472.MP25, 472.MP26

TRADE NAME	Aircastle Model 472.MP25 (3Speed), 472.MP26 (Single Speed)
SUPPLIER	Spiegel, Inc., 1061 W. 35th St., Chicago 9, Ill.
TYPE SET	AC Operated Phono Amplifier with Manual Record Player
TUBES (ONE)	Type 25L6GT Audio Output
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING .390 Amp. @ 117 Volts AC



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	25L6GT	850KΩ	10Ω	†215Ω	†4.7KΩ	0Ω	32Ω	0Ω	150Ω

† MEASURED FROM OUTPUT OF M1

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1952

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Audio Output	25L6GT	25L6GT	7S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	CFT55C13	AFH3-79		UP5515C		7VL-3430	■ Filter
B	50	150							▲ Filter †
C	20	25							Audio Output Cathode
C2	.02	400	CPZ04203M	P488-02	DF-203	PTE4S2		4TM-S2	Audio Output Plate
C3	.05	400	CPZ04503M	P488-05		PTE4S5		4TM-S5	Line Isolation

† Some Models use 40MFD in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1meg	½	RVC302S	Q13-137	AG-63-Z	An-70	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	K-155	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	150Ω	½	RCC151M	BTS-150	Output Cathode
R3	4700Ω	1½	RCC472M	BTS-4700	Filter
R4	15Ω	½	RCC150M		Surge Limiter

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.1KΩ	3.1Ω	200Ω	.5Ω	A1660-13	A-3876 ①	A-2928 ①	R0-2 ①	① Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS: FIELD RES.	RATINGS: V. C. IMP.	REPLACEMENT DATA: AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1A	P M	3.1Ω	A-4603-15	ST-113 (Mod. P4-X	4A1	
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

SELENIUM RECTIFIER

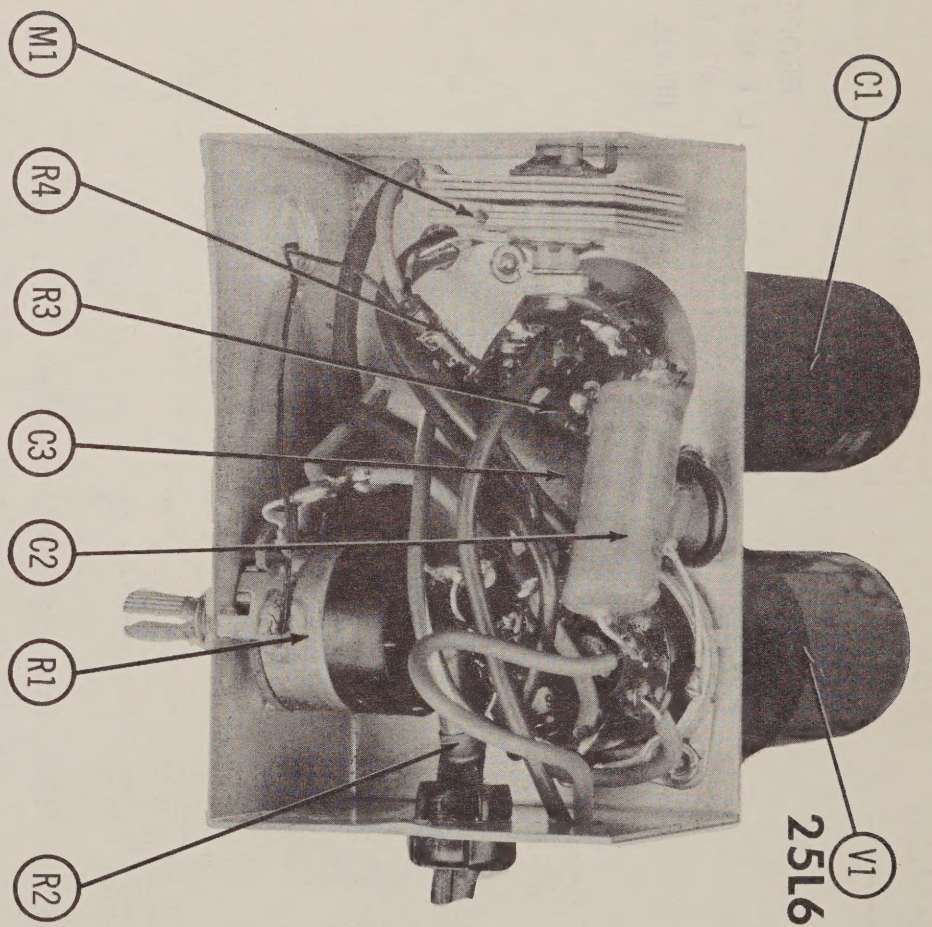
ITEM No.	RATING: CURRENT	REPLACEMENT DATA: AIRCASTLE PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART NO.	NOTES
M1	.055A DC	A-4110-33	NB-5	8J1	1002A	

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA: AIRCASTLE PART No.	ASTATIC PART No.: CARTRIDGE	ASTATIC PART No.: NEEDLE	SHURE PART No.: CARTRIDGE	SHURE PART No.: NEEDLE	ELECTRO-VOICE PART No.: CARTRIDGE	ELECTRO-VOICE PART No.: NEEDLE	REMARKS
M2		L-12	Optional	W42H	Optional	H-60	Optional	

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTING SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

CHASSIS—BOTTOM VIEW



PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA: AIRCASTLE PART No.	WALCO PART No.	JENSEN PART No.	REMARKS
M3		Optional	J-152	

AIRCASTLE MODEL 652.505

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

AIRCASTLE
MODEL 652.505

AIRCASTLE
MODEL 652.505

TRADE NAME	Aircastle Model 652.505
SUPPLIER	Speigel, Inc, 1061 W. 35th. St., Chicago 9, Ill.
TYPE SET	AC Operated AM-Phono Combination Superheterodyne With 3 Sp eed Manual Record Player
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AV6 or 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W Rectifier
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	.26 Amp @ 117 Volts AC
TUNING RANGE—BROADCAST	530-1650 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a.1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid), 12BE6 (V1) Low side to B-.	455 KC (400~ Mod)	Tuning gang fully closed	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1650 KC	Tuning gang fully open	"	A5	Adjust for maximum output
3.	"	"	530 KC	Tuning gang fully closed	"	A6	Adjust for maximum output. Repeat steps 2 & 3 until no further improvement is noted.
4.	"	Loop	1400 KC	Tune to 1400 KC signal	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

After set is aligned and in cabinet, tune in 1400KC signal and set pointer to 1400 on dial.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

AIRCASTLE MODEL 652.505

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3A	Det. -AVC-AF Amp	12AV6	12AV6	7BT	
B	Det. -AVC-AF Amp	12AT6	12AT6	7BT	Alternate
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150		PRS/40-30-		EDL44215		TVA-3448	Filter (Red)
B	40	150		20					Filter (Red)
C	20	150							Decoupling (Blue)
C2	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C3	150	500		1468-00015	D6-152	5W5T15	GP2K-151	1FM-315	Diode RF Filter †
C4	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C5	150	500		1468-00015	D6-152	5W5T15	GP2K-151	1FM-315	AF Amp. Plate Bypass †
C6	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Output Plate
C8	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C9	.1	200		P288-1	DF-104	PJ2P1		2TM-P1	Line Isolation

† Some models use 200MMF in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	750KΩ	½	VC-20	Q13-133	AG-79-Z	B-60-S	Volume Control - See note
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A per instructions

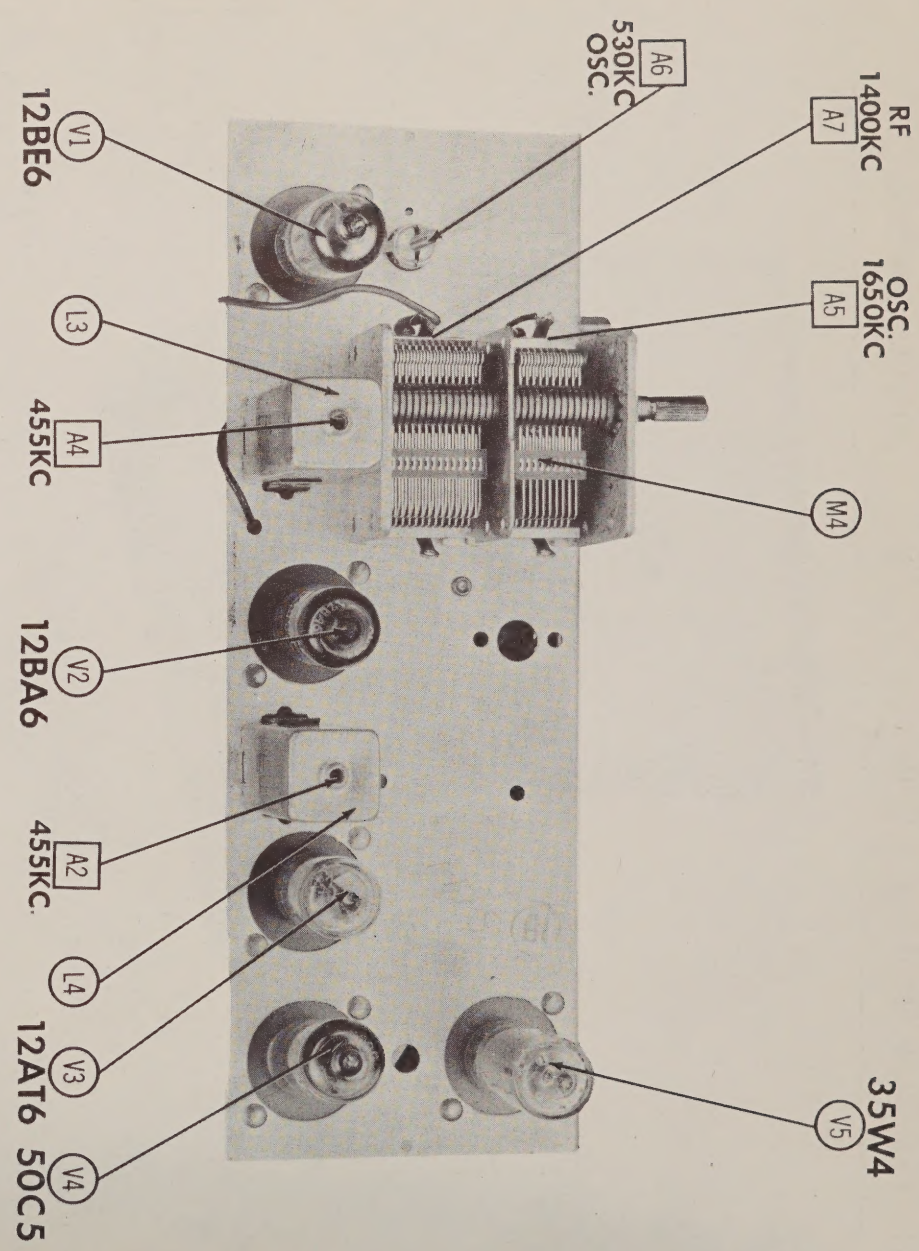
Note: Some models use 500KΩ control.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½			Osc. Grid
R3	220Ω	½		BTS-220	IF Amp. Cathode
R4	2.2Meg	½		BTS-22Meg	AVC Network
R5	10Meg	½		BTS-10Meg	AF Amp. Grid
R6	220KΩ	½		BTS-220K	AF Amp. Plate
R7	470KΩ	½		BTS-470K	Output Grid
R8	150Ω	½		BTS-150	Output Cathode
R9	4.7Meg	½		BTS-4.7Meg	Tone Compensation - See note 1
R10	470KΩ	½		BTS-470K	Phono Pick-up Shunt - See note 2
R11	2200Ω	1		BTA-2200	Filter
R12	330Ω	1		BTA-330	Filter
R13	18Ω	½			Rectifier Ballast

Note 1. Some models use a 1.5Meg Resistor in this application.
Note 2. Some models use a 100KΩ Resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2KΩ	3.4Ω	190Ω	.5Ω	Part of SP100	A-3876 ①	A-2928 ①	R0-2 ①	① Bend mtg. tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	3.4Ω	SP100	ST-105 (Mod. P5-X)	5A07	
	CONE DIA.	V. C. DIA.				
SP1B	5"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRCASTLE PART No.	MERIT PART No.	
L1	Loop Ant.	3.2Ω				
L2	Osc. Coil	.6Ω	5.6Ω			
L3	Input IF	25Ω	24Ω			
L4	Output IF	24Ω	23Ω			

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								REMARKS
	AIRCASTLE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1								

PHONO NEEDLE

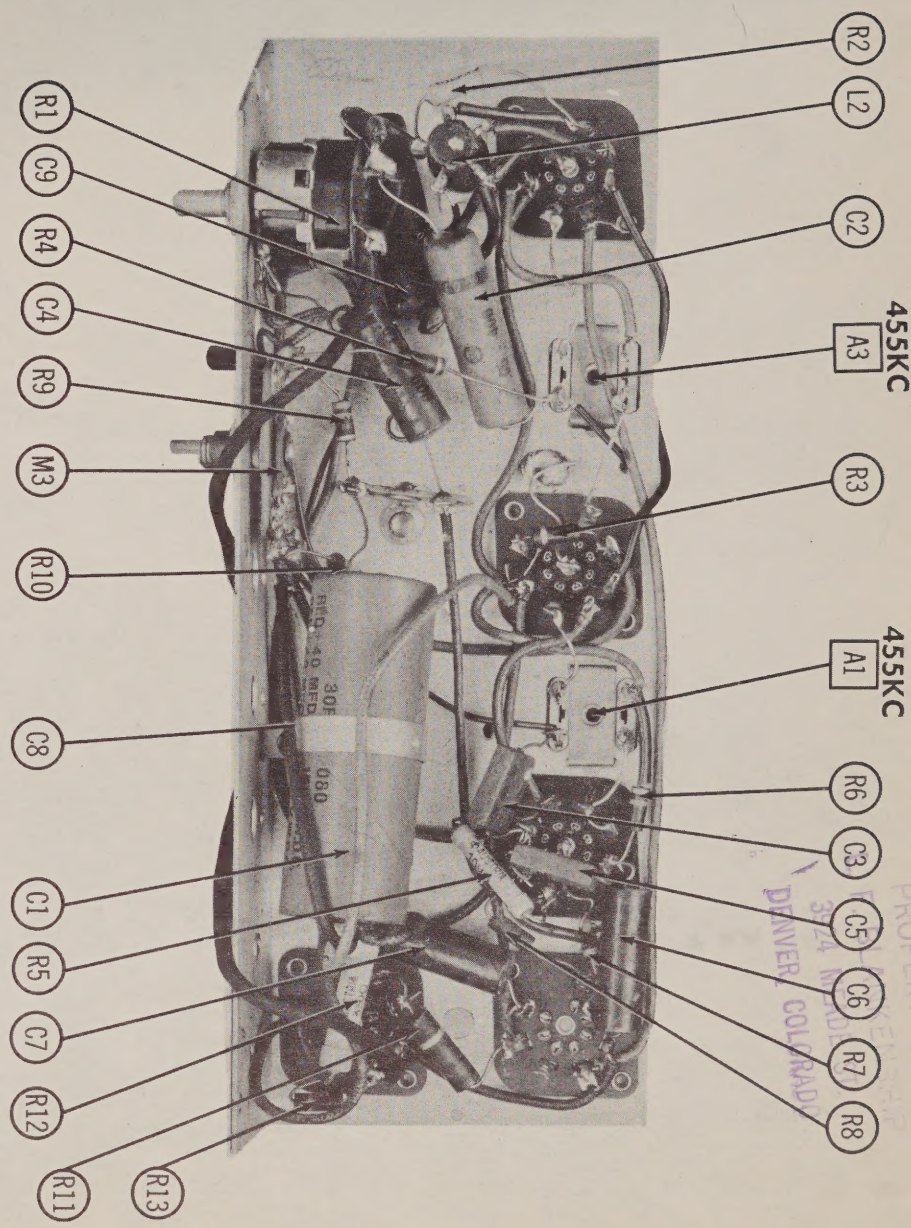
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	PART No.	WALCO PART No.	JENSEN PART No.	
M2		W-14AGA	W-422	

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M3	Switch		Radio - Phono
M4	2 gang Var. Cap.		(35-467MMF, 24-185MMF)

CHASSIS—BOTTOM VIEW

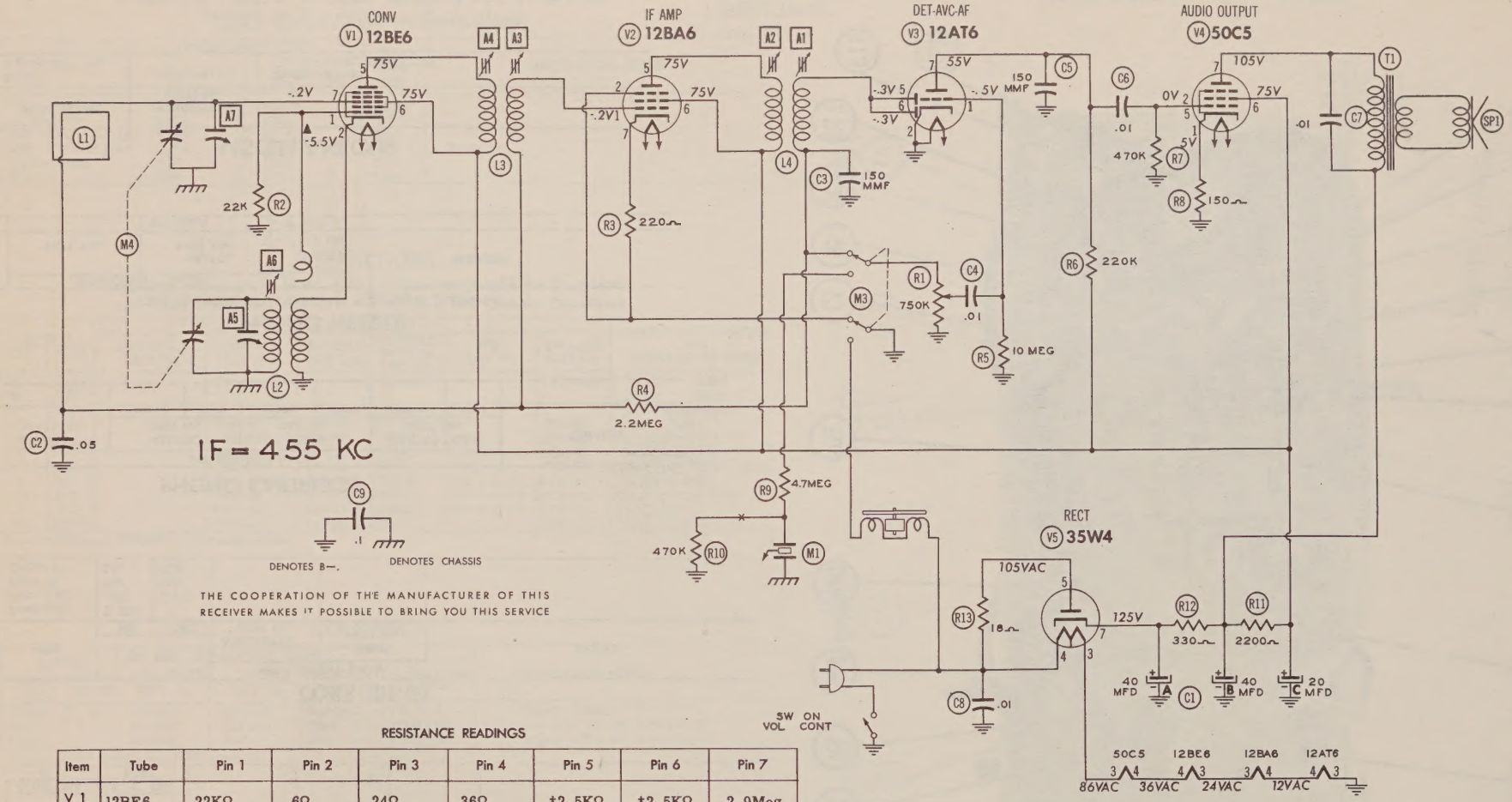


PROPERTY OF
324 MADISON
DENVER, COLORADO

SET 168 FOLDER 2

AIRCASTLE MODEL 652.505

AIRCASTLE MODEL 652.505



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.6Ω	24Ω	36Ω	†2.5KΩ	†2.5KΩ	2.9Meg
V 2	12BA6	2.9Meg	0Ω	24Ω	12Ω	†2.5KΩ	†2.5KΩ	220Ω
V 3	12AT6	10Meg	0Ω	0Ω	12Ω	750KΩ	750KΩ	†220KΩ
V 4	50C5	150Ω	470KΩ	86Ω	36Ω	470KΩ	†2.5KΩ	†520Ω
V 5	35W4	†330Ω	INF	86Ω	121Ω	139Ω	103Ω	35KΩ

ALL MEASUREMENTS TAKEN IN "RADIO" POSITION.
† MEASURED FROM PIN 7 OF V5.
▲ TAKE WITH VACUUM TUBE VOLTMETER.

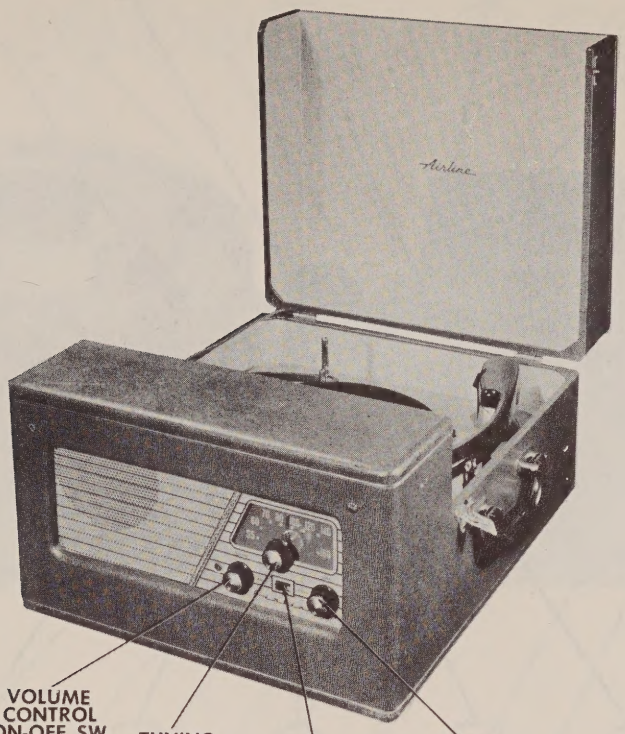
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1952

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
C. E. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

AIRLINE
MODEL 15GAA-995A



AIRLINE
MODEL 15GAA-995A

TRADE NAME	Airline Model 15GAA-995A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver
TUBES (Five)	Types 12SA7 Conv., 12SK7 IF Amp., 12SQ7 Det.-AVC-AF Amp., 50L6 Audio Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	.25 Amp @ 117 Volts AC
TUNING RANGE--BROADCAST	535 - 1620 KC

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.		Loop	455 KC (400~ Mod)	Tuning gang fully closed	Across voice coil	A1, A2 A3, A4	Short out the oscillator section of tuning gang, turn trimmer A6 fully closed. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.		"	1620 KC	Tuning gang fully open	"	A5	Remove short across oscillator section and adjust A5 for maximum output.
3.		"	1400 KC	Tune for maximum output	"	A6	Set pointer to 1400 on dial Adjust A6 for maximum output
4.		"	600 KC	"	"	Tuning gang	Bend outside plates of antenna section of tuning gang slightly for maximum output.
5.		"	1400 KC	1400 KC	"	A6	Check alignment for maximum output at 1400 and readjust A6, if necessary.

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT SEE SIMILAR MODEL VM-950 - PHOTOFACT SET #107 - FOLDER 13 OR RECORD CHANGER MANUAL CM-3.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

AIRLINE MODEL 15GAA-955A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7	12SA7	8R	
V2	IF Amplifier	12SK7GT	12SK7GT	8N	
V3	Det-AVC-AF Amp	12SQ7	12SQ7	8Q	
V4	Audio Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	1003	PRS150/40-30-20		EZ44315C		TVA-3448	Filter (Red)
B	40	150		PRS25/25				TVA-1205	Filter (Red)
C	20	150							Decoupling (Yellow)
D	20	25							Output Cahode (Blue)
C2	5000		824	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Tuning Gang Isolation
C3	.1	200	804	P288-1	DF-104	PJ2P1		2TM-P1	AVC Filter
C4A	100		†811	SI100	†PC-50	TM5T1	GP1K-101	†100C1	Diode RF Filter
B	100			SI100		TM5T1	GP1K-101		Diode RF Filter
C5	.01		‡813	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C6	250		817	SI250	D6-251		GP2K-251	5GA-T25	AF Amp. Plate Bypass
C7	.01		¶814	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C8	.01	400	825	P488-01	D6-103	PTE 4S1	GP2-333-103	4TM-S1	Tone Comp.
C9	5000		824	SI5000	D6-502	TM5D5	GP2-333-502	5HK-D5	Audio Output Plate
C10	.05	400	803A	P488-05		PTE4S5		4TM-S5	Line Filter
C11	.1	200	804	P288-1	DF-104	PJ2P1		2TM-P1	Line Isolation

† Items C4A, C4B, R5 are combined in one unit.
‡ Items C5, R7 are combined in one unit.
¶ Items C7, R8 are combined in one unit.

CONTROLS

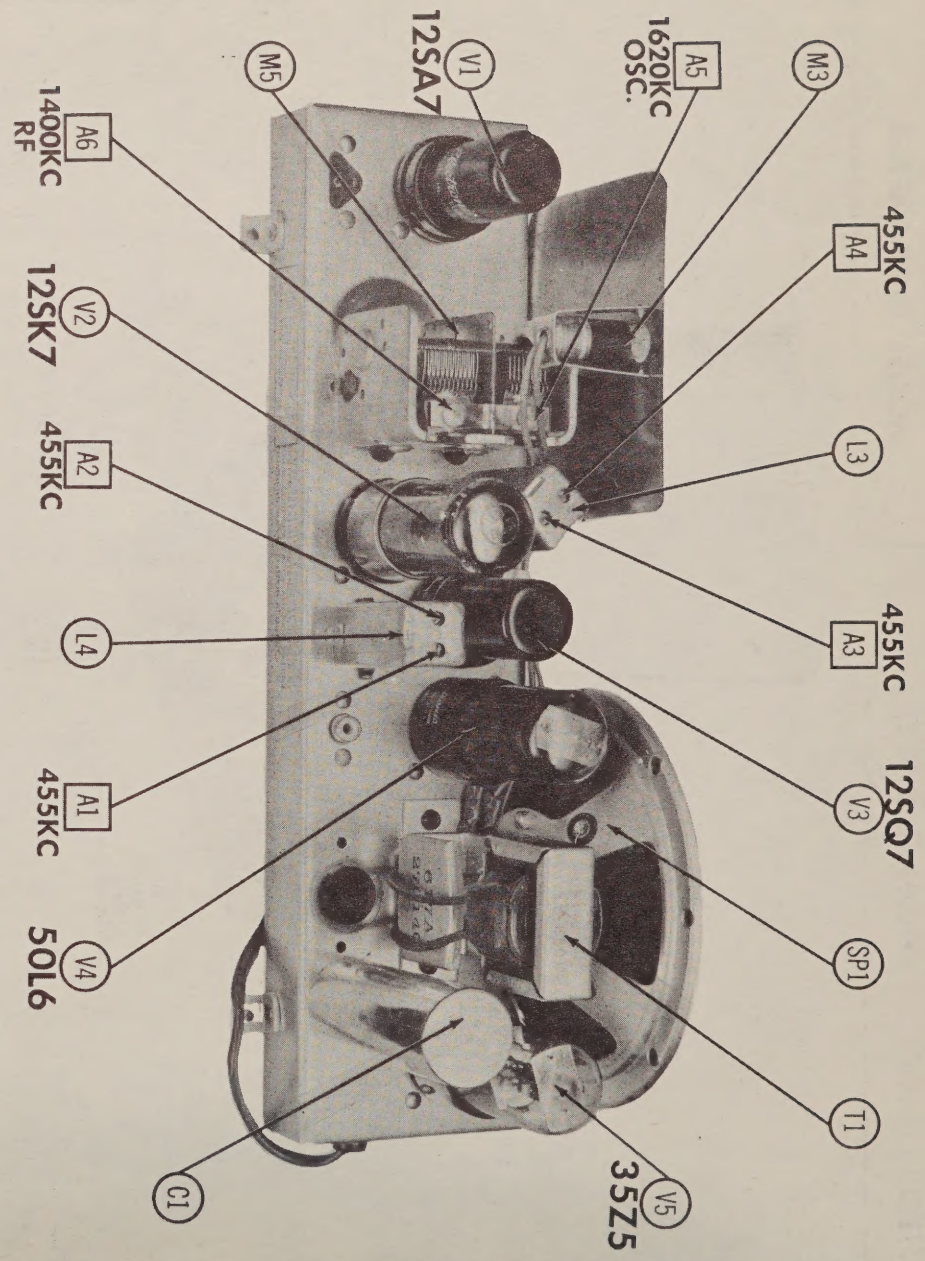
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500K	½	401	Q13-133	AG-60-Z	BSK-60-S	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A per instructions
R2A	500KΩ	½	408	Q13-133	AG-60-Z	BSK-60	Tone Control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R2A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
R3	22KΩ	½	517		Osc. Grid
R4	2.2Meg	½	615	BTS-2.2Meg	AVC Network
R5	50KΩ	½	†811		Diode Filter
R6	47Ω	½	520		AF Amp. Cathode
R7	5Meg	½	‡813		AF Amp. Grid
R8	100KΩ	½	¶814	BTS-100K	AF Amp. Plate
R9	510KΩ	½	502		Series Phono
R10	1Meg	½	516	BTS-1Meg	Feedback Network
R11	510KΩ	½	502		Output Grid
R12	150Ω	½	505	BTS-150	Output Cathode
R13	47Ω	½	520		Rectifier Ballast - See Note 1
R14	270Ω	1	602	BTA-270	Filter
R15	1000Ω	½	607	BTS-1000	Filter

Note 1. Some models use a 30Ω resistor in this application.
† Items R5, C4A, C4B are combined in one unit.
‡ Items R7, C5 are combined in one unit.
¶ items R8, C7 are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.3KΩ	4Ω	200Ω	.6Ω	1201 (Part of 2607)	A-3876 ①	A-3029 ①	R0-2 ①	① Bend Mounting Tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P M	4Ω	2607	ST105 Mod P5-X	5A1	
	CONE DIA.	V. C. DIA.				
SP1B	5"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRLINE PART No.	MERIT PART No.	
L1	Loop Ant.	1.5Ω		1512		
L2	Osc. Coil	8.3Ω				Tap ⓐ .6Ω
L3	Input IF	7.5Ω	7.5Ω	1402		
L4	Output IF	11.2Ω	11.2Ω	1403		

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA						REMARKS
	AIRLINE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M1	2534	AC-AG-J	A-AG	W26B	A66U	33	0-2 or S-2

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTING SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	AIRLINE PART No.	WALCO PART No.	JENSEN PART No.	
M2	62-349	W-20AGA or W-21AGS	E-962 or E-902	

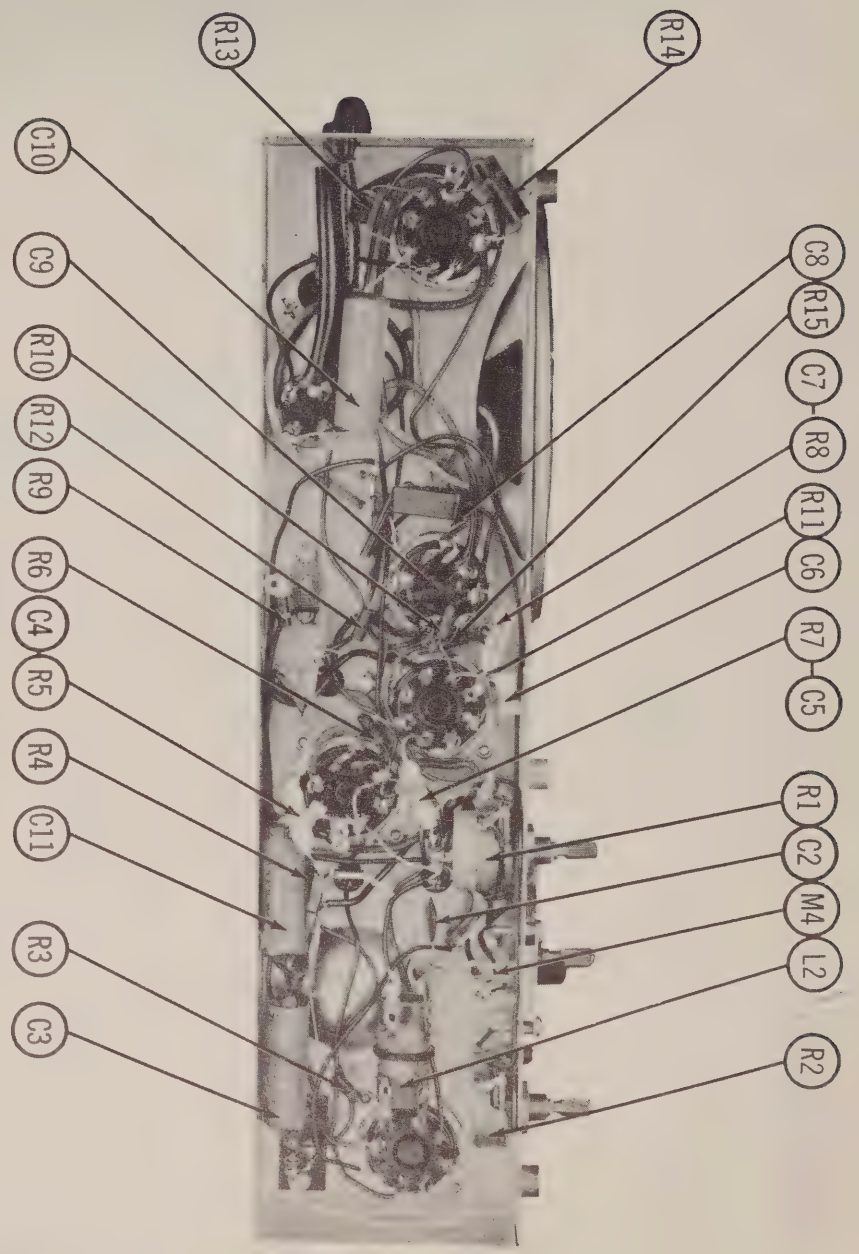
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRLINE PART No.		
M3	Bayonet	6-8	.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4	Switch		Radio-Phono (16-382MMF, 30-192MMF)
M5	2 Gang Var. Cap.	1004A	
	Dial	1722C	
	Pointer	1736A	
	Knob	2411	

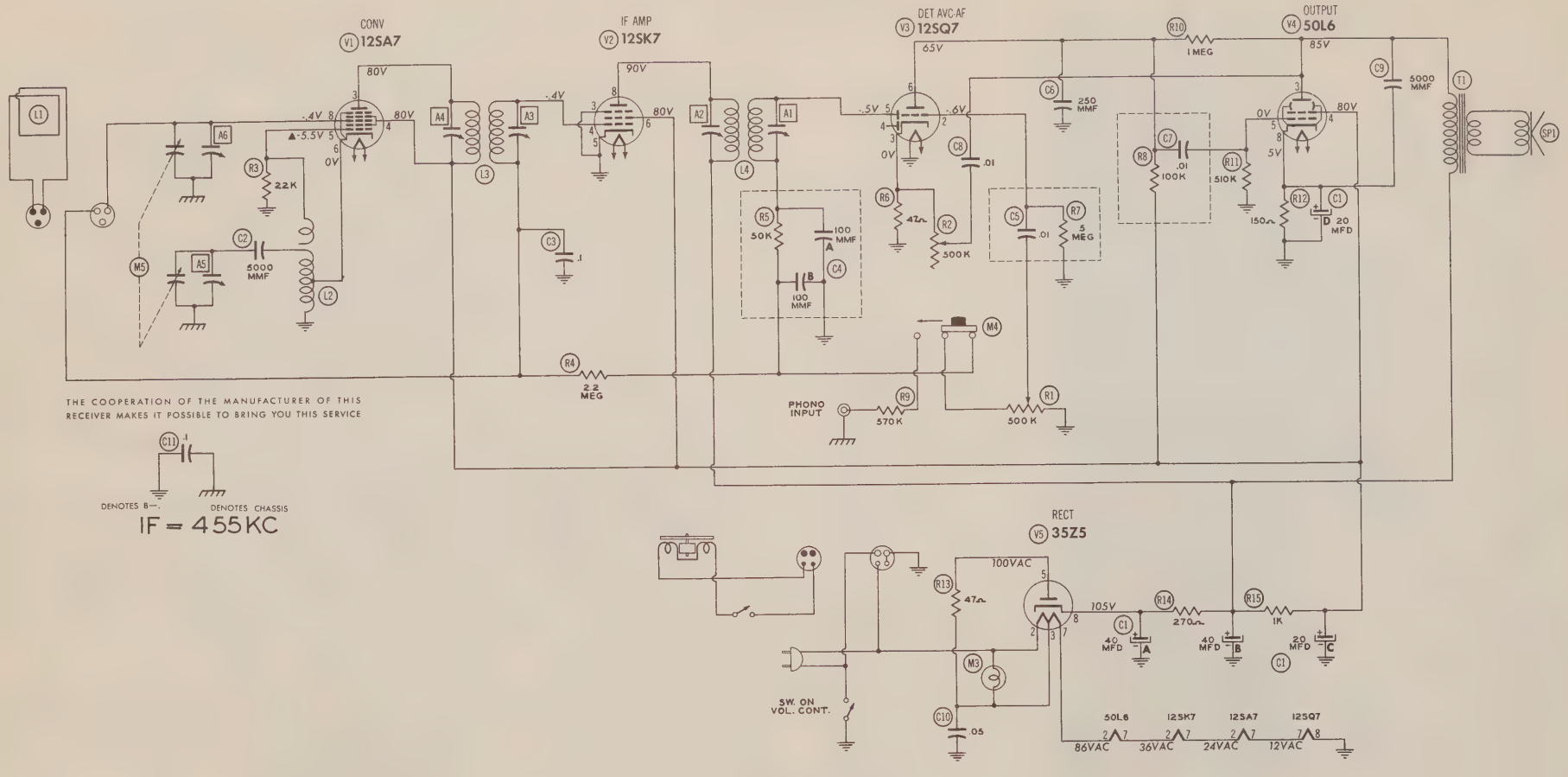
CHASSIS—BOTTOM VIEW



SET 168 FOLDER 3

AIRLINE MODEL 15GAA-995A

AIRLINE MODEL 15GAA-995A



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	¶0Ω	24Ω	†1.3KΩ	†1.3KΩ	22KΩ	.6Ω	12Ω	2.7Meg
V 2	12SK7	¶0Ω	36Ω	0Ω	2.7Meg	0Ω	†1.3KΩ	24Ω	†270Ω
V 3	12SQ7	¶0Ω	5Meg	47Ω	INF	550KΩ	†100KΩ	12Ω	0Ω
V 4	50L6GT	¶0Ω	86Ω	†470Ω	†1.3KΩ	510KΩ	†270Ω	36Ω	150Ω
V 5	35Z5GT	¶0Ω	121Ω	103Ω	INF	150Ω	†270Ω	86Ω	50KΩ

ALL MEASUREMENTS TAKEN IN "RADIO" POSITION
† MEASURED FROM PIN 8 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER
¶ MEASURED FROM CHASSIS

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1952

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder
*TRADE MARK

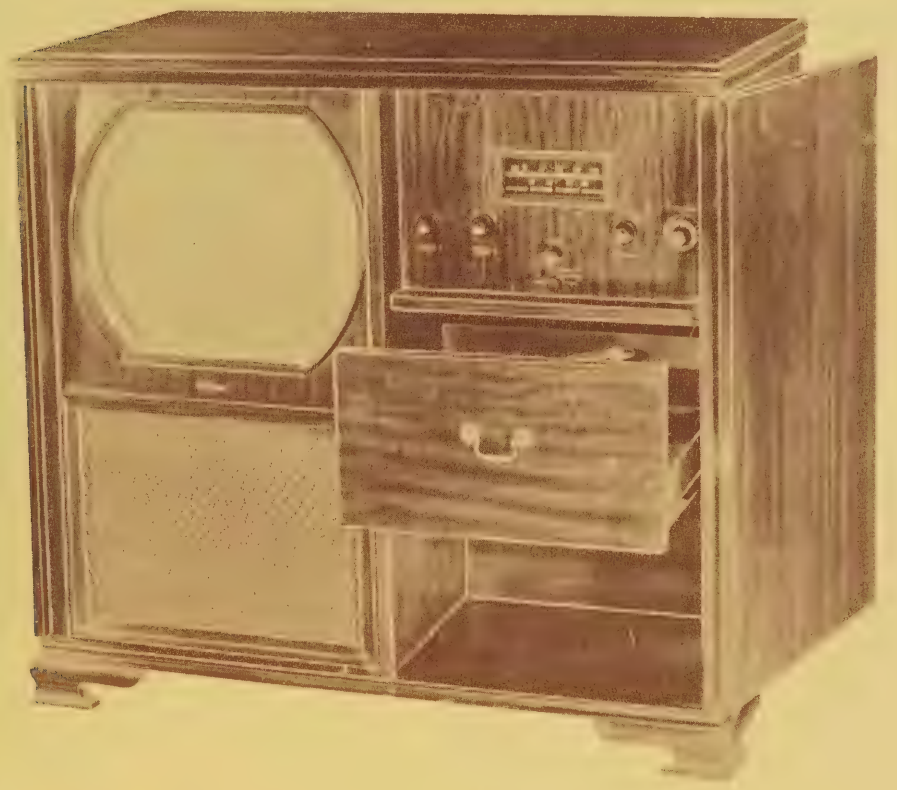
ANDREA
MODEL CO-VL-19 (Ch. VL-19)

PROPERTY OF
F. BLANKENSHIP
[illegible] MEADE ST.
DENVER, COLORADO

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL CO-VL-19

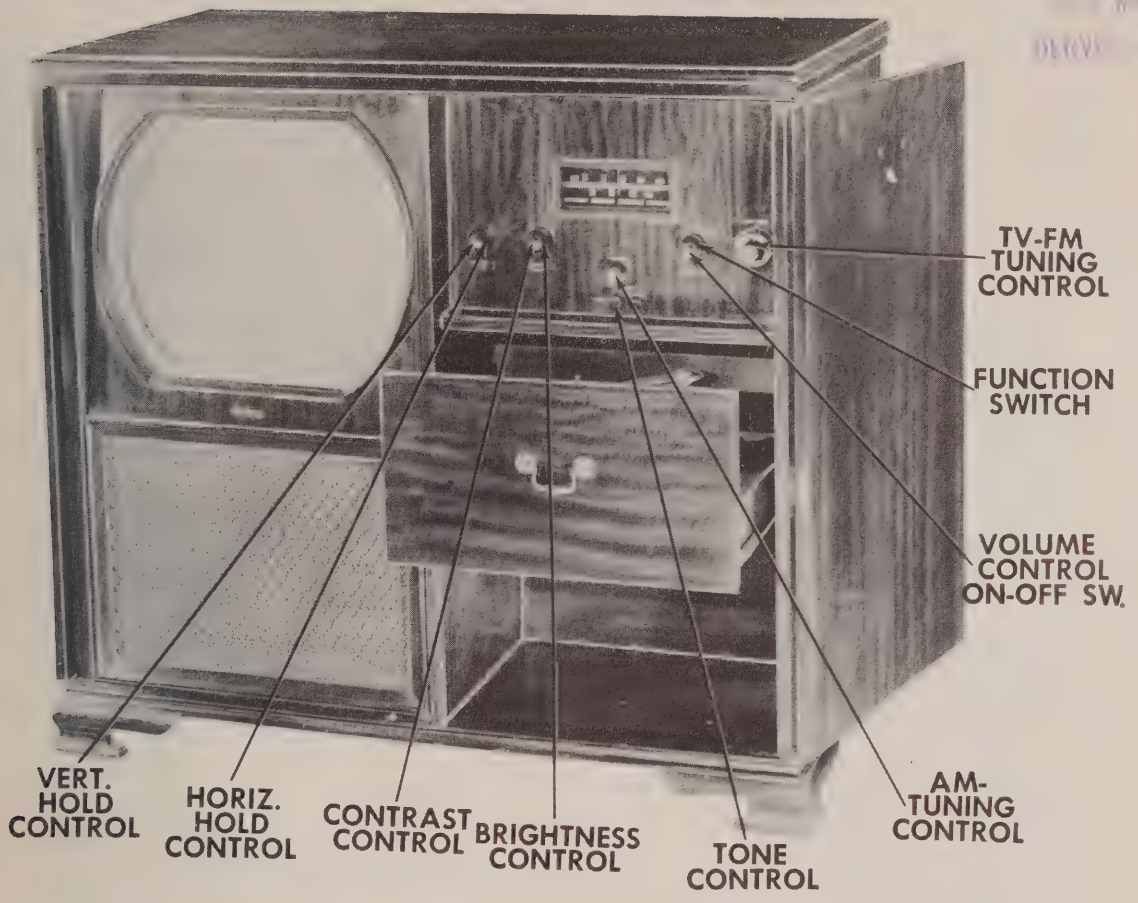
ANDREA
MODEL CO-VL-19 (Ch. VL-19)

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5-52 SET 168 FOLDER 4

ANDREA
MODEL CO-VL-19 (Ch. VL-19)



ANDREA
MODEL CO-VL-19 (Ch. VL-19)

TRADE NAME	Andrea Model CO-VL-19 (Ch. VL-19)
MANUFACTURER	Andrea Radio Corp., 27-01 Bridge Plaza North, Long Island City, N. Y.
TYPE SET	TV-FM-AM Phono Combination
TUBES	Twenty-Nine

POWER SUPPLY 110-120 Volts AC-60 Cycles RATING 2.5 Amp. @ 117 Volts AC
TUNING RANGE—(TV) Channels 2 thru 13 continuous tuning (FM) 88-108MC (AM) 540-1650KC

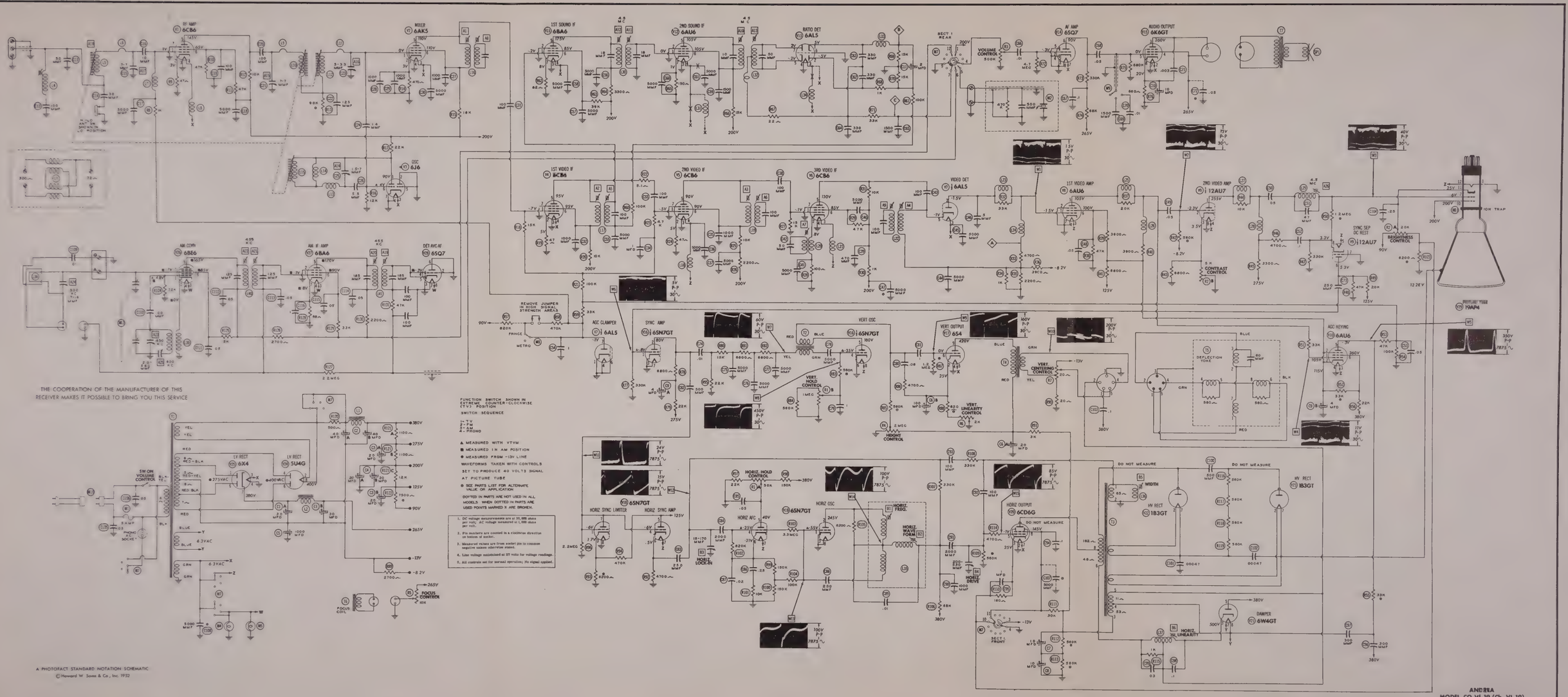
INDEX

Alignment Instructions 6, 7
Radio Dial Cord Stringing 8
Disassembly Instructions 16
Horizontal Sweep Circuit Adjustments 10
Parts List and Descriptions 13, 14, 15, 19
Photographs
Cabinet - Rear View 16
Capacitor Identification 4, 9
Photos (cont.)
Chassis - Top View 3
Inductor & Alignment Identification 12, 17
Resistor Identification 11, 18
Resistance Measurements 8
Schematic 2
Tube Placement Charts 5

FOR SERVICE INFORMATION ON RECORD CHANGER SEE WEBSTER CHICAGO MODEL 100 PHOTOFACT SET 135 FOLDER 14.

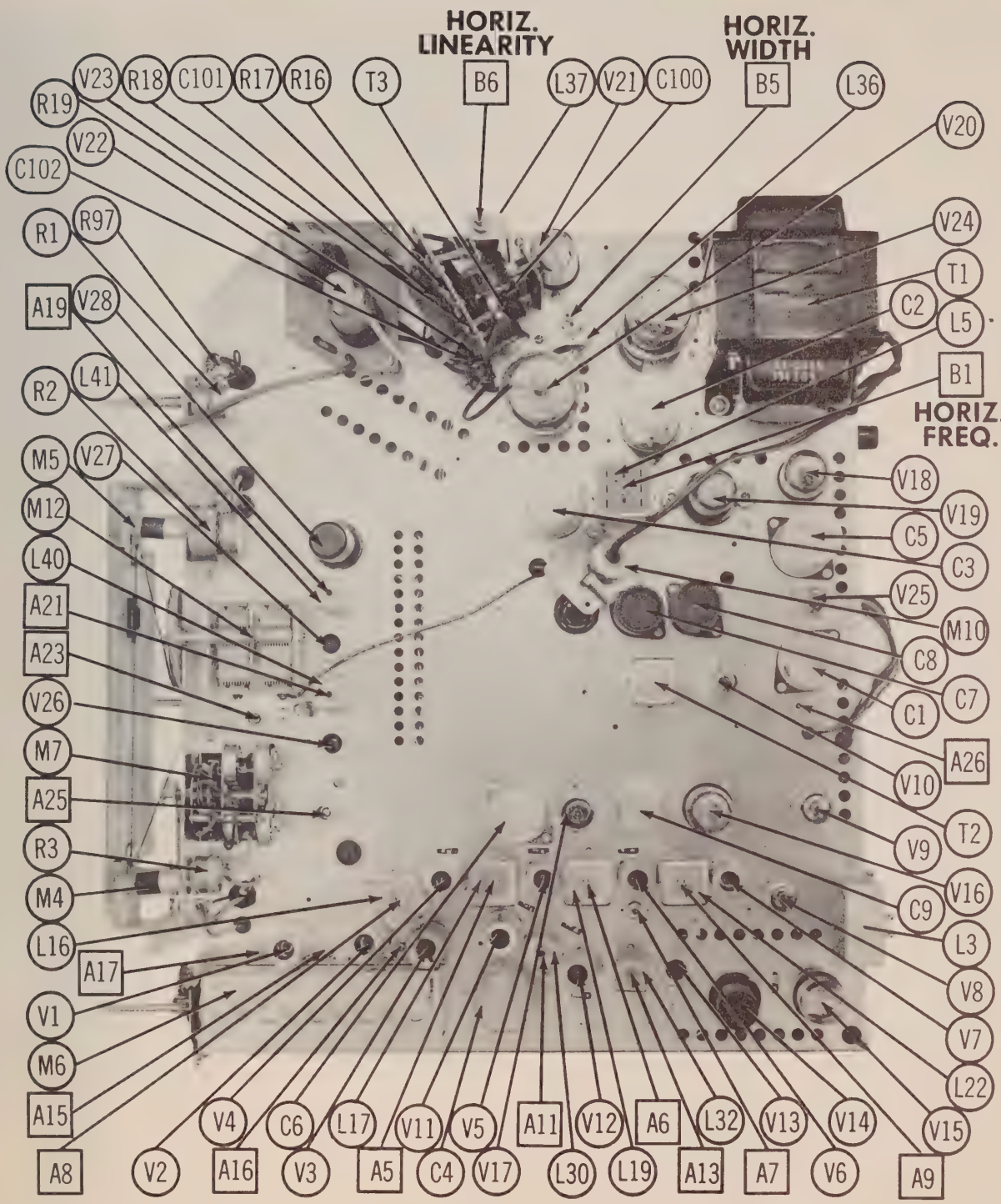
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


RF AMP V1 6CB6
MIXER V2 6AK5
OSC V3 6J6
1ST SOUND IF V11 6BA6
2ND SOUND IF V10 6AU6
RATIO DET V12 6AL5
RECT REAR
VOLUME CONTROL 500K
AF AMP V14 6SQ7
AUDIO OUTPUT V15 6K6GT
1ST VIDEO IF V4 6CB6
2ND VIDEO IF V5 6CB6
3RD VIDEO IF V6 6CB6
VIDEO DET V7 6AL5
1ST VIDEO AMP V8 6AU6
2ND VIDEO AMP V9 12AU7
SYNC SEP DC REST V9 12AU7
CONTRAST CONTROL
BRIGHTNESS CONTROL
ION TRAP
PICTURE TUBE V20 19AP4
AM CONV V96 6BE6
AM IF AMP V97 6BA6
DET AVC AF V98 6SQ7
ACC CLAMPER V17 6AL5
REMOVE JUMPER IN HIGH SIGNAL STRENGTH AREAS
SYNC AMP V18 6SN7GT
VERT OSC V18 6SN7GT
VERT OUTPUT V17 6S4
VERT CENTERING CONTROL
VERT LINEARITY CONTROL
VERT HOLD CONTROL
HEIGHT CONTROL
DEFLECTION YOKE
ACC KEYING V16 6AU6
HORIZ SYNC LIMITER V19 6SN7GT
HORIZ SYNC AMP
HORIZ AFC
HORIZ OSC
HORIZ HOLD CONTROL
HORIZ FREQ. CONTROL
HORIZ WIDTH COIL
HORIZ LOCK
HORIZ DRIVE
HORIZ OUTPUT V20 6CD6G
DO NOT MEASURE
WIDTH
HV RECT V22 1B3GT
HV RECT 1B3GT
DAMPER V21 6W4GT
HORIZ LIN. LINEARITY
SW ON VOLUME CONTROL
PHONO JACK
LV RECT V99 6X4
LV RECT V99 5U4G
FOCUS COIL L5
FOCUS CONTROL 40K
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
FUNCTION SWITCH SHOWN IN EXTREME COUNTER-CLOCKWISE (CTW) POSITION
SWITCH SEQUENCE
1- TV
2- FM
3- AM
4- PHONO
▲ MEASURED WITH VTVM
■ MEASURED IN AM POSITION
● MEASURED FROM -13V LINE
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 40 VOLT SIGNAL AT PICTURE TUBE
⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION.
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
1. DC voltage measurements are at 20,000 ohms per volt; AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; No signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1952
ANDREA
MODEL CO-VL-19 (Ch. VL-19)

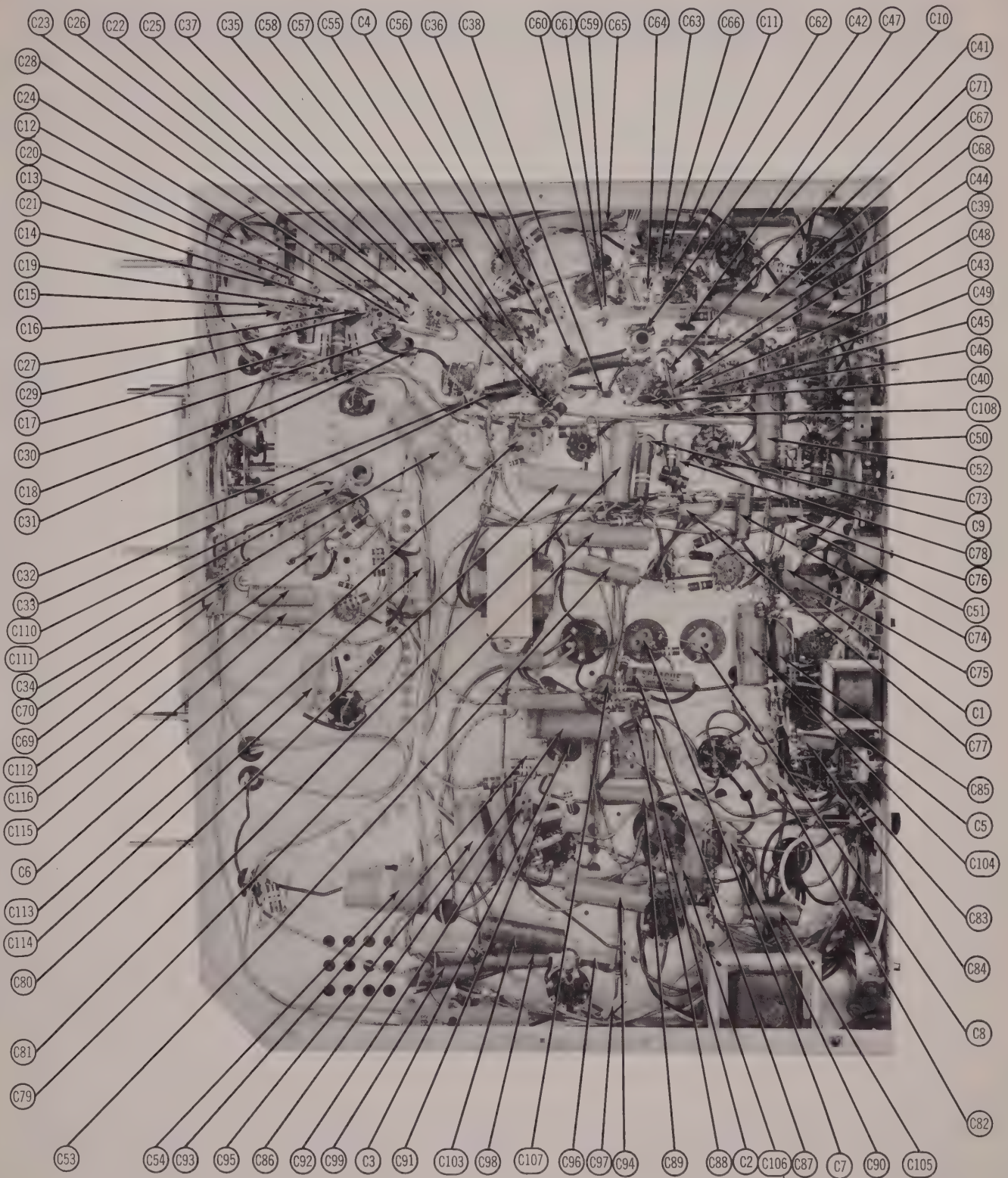
ANDREA
MODEL CO-VL-19 (Ch. VL-19)

PROPERTY OF
L-V ELECTRONICS
DENVER, COLORADO



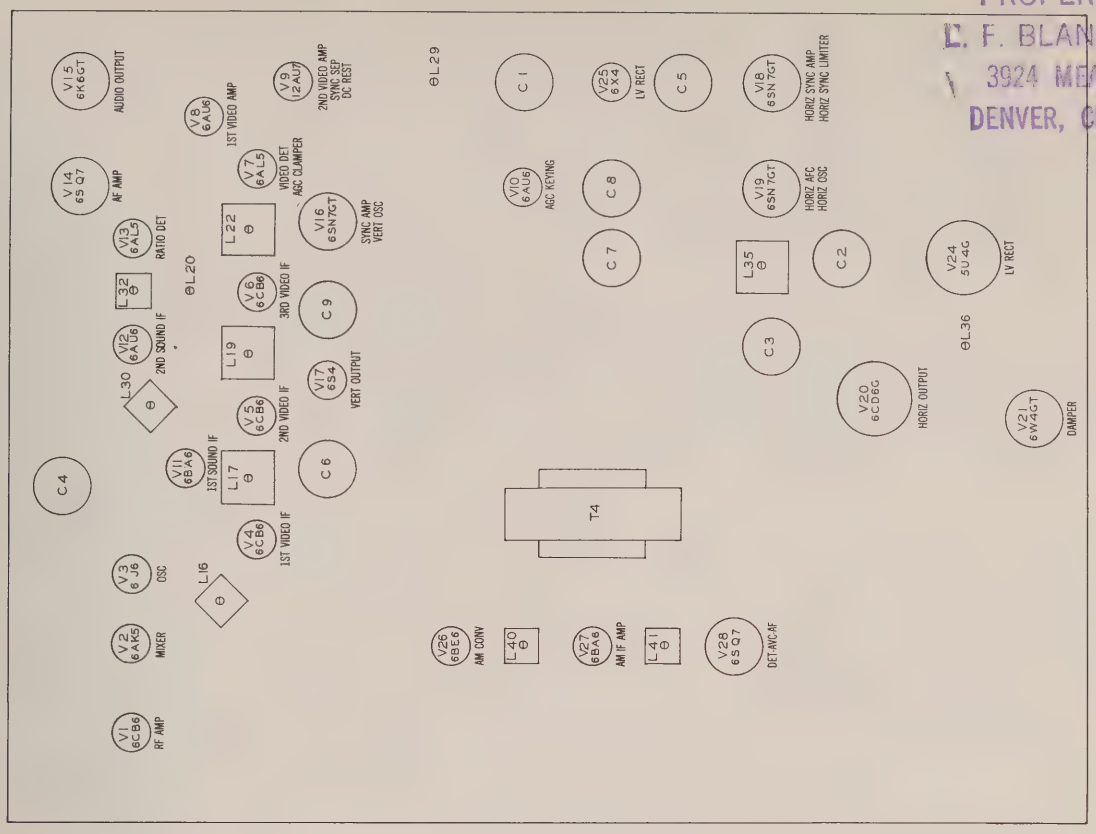
CHASSIS TOP VIEW

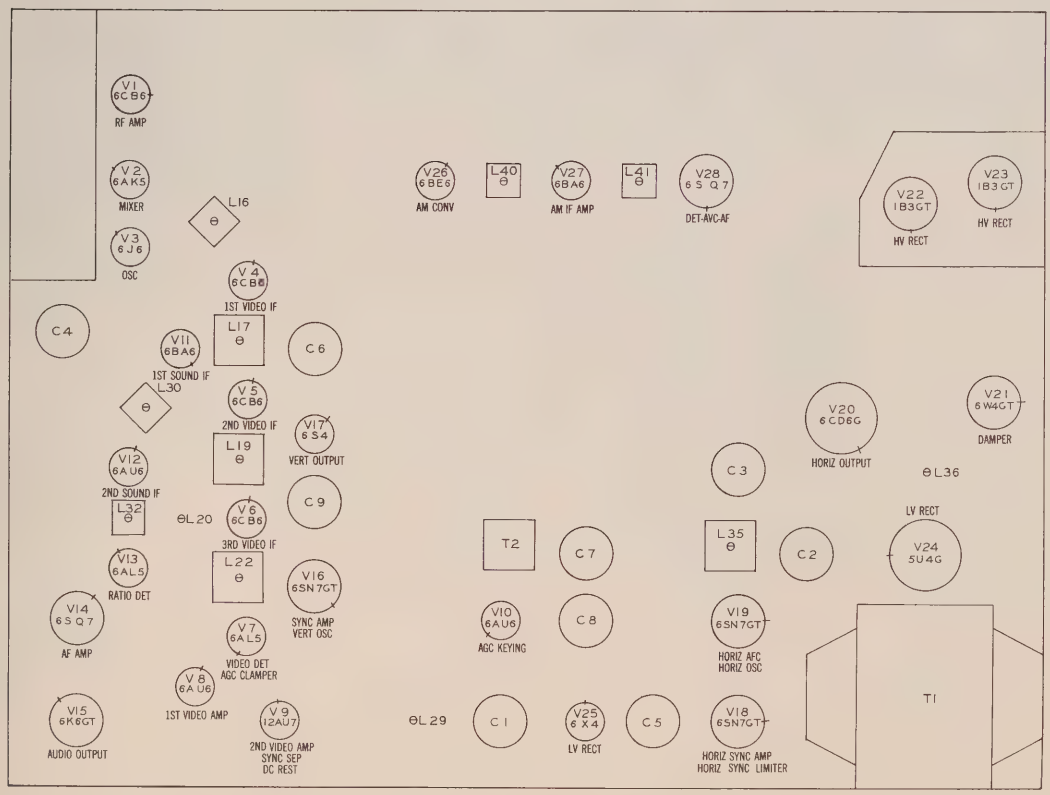
ANDREA
MODEL CO-VL-19 (Ch. VL-19)



CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO


V15 6K6GT AUDIO OUTPUT
V14 6S Q7 AF AMP
V13 6AL5 RATIO DET
V12 6AU6 2ND SOUND IF
V11 6BA6 1ST SOUND IF
V4 6CB6 1ST VIDEO IF
V3 6 J6 OSC
V2 6AK5 MIXER
V1 6CB6 RF AMP
V8 6AU6 1ST VIDEO AMP
V9 12AU7 2ND VIDEO AMP SYNC SEP DC REST
V7 6AL5 VIDEO DET AGC CLAMPER
V16 6SN7GT SYNC AMP VERT OSC
V6 6CB6 3RD VIDEO IF
V5 6CB6 2ND VIDEO IF
V17 6S4 VERT OUTPUT
V10 6AU6 AGC KEYING
V19 6SN7GT HORIZ AFC HORIZ OSC
V18 6SN7GT HORIZ SYNC AMP HORIZ SYNC LIMITER
V25 6X4 LV RECT
V24 5U4G LV RECT
V20 6CD6G HORIZ OUTPUT
V21 6W4GT DAMPER
V26 6BE6 AM CONV
V27 6BA6 AM IF AMP
V28 6S Q7 DET-AVC-AF
L16 L17 L19 L22 L30 L32 L35 L40 L41
C1 C2 C3 C4 C5 C6 C7 C8 C9
T4
θL20 θL29 θL36
BOTTOM VIEW



TOP VIEW

TUBE PLACEMENT CHART

ANDREA
MODEL CO-VL-19 (Ch. VL-19)

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing horizontal oscillator tube V19 from its socket.
Turn the function selector switch to "TV" (extreme counter clockwise position)

VIDEO IF ALIGNMENT

Remove the oscillator tube V3 from its socket to prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C53 and the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over mixer tube V2. Low side to chassis.	24MC (10 MC Sweep)	23MC 26.2MC	Any	Vert. amp. to point (A) Low side to chassis.	A1, A2, A3, A4	Adjust for response curve similar to Fig. 1
2.	"	"	"	21.7MC	"	"	A5, A6, A7	Adjust for minimum marker amplitude at 21.7MC point on response curve.
3.	"	"	"	27.7MC	"	"	A8, A9	Adjust for minimum marker amplitude at 27.7 MC point on response curve.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.001MFD	High side to pin 1 (grid) of 6BA6 (V11). Low side to chassis.	21.7MC (450 KC Sweep)	21.7MC	Any	Vert. Amp. to point (B) Low side to chassis.	A10, A11, A12	Disconnect stabilizer capacitor C11. Adjust for maximum amplitude and symmetry as per Fig. 2.
5.	"	"	"	"	"	Vert. Amp. to point (C) Low side to chassis.	A13	Reconnect capacitor C11. Adjust A13 so 21.7MC marker appears at crossover point as per Fig. 3. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Disconnect the 3 volt bias battery.
Replace the oscillator tube, V3, in its socket.
Turn the dial on the tuner shaft to its extreme clockwise position. In this position the radial index mark on the dial and the numeral 1 of 108 should be straight up.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	Direct	Across antenna terminals (high side to ungrounded terminal).	215.75 MC (Unmod.)	13	DC probe to point (C) Low side to chassis.	L13	Expand or compress coil for zero voltage reading on VTVM. A positive or negative reading will be obtained on either side of the correct setting.
7.	"	"	59.75 MC	2	"	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of correct setting. Repeat steps 6 and 7 until no further improvement can be made.

RF AND MIXER ALIGNMENT

The RF and mixer portion of this receiver has been properly aligned at the factory and is very stable, alignment should not be attempted unless it is definitely known to be out of alignment.
A sweep generator with a maximum of at least .5 volt output is required to align this tuner.
Remove the first video IF amplifier tube (V4) from its socket.
Solder a 220 ohm resistor between pins 5 and 6 of V2.
Connect the oscilloscope vertical input to pin 5 of V2 low side to chassis.
Unsolder C16 from pin 1 of RF amp. (V1).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	500MMF	High side to pin 1 (grid) of 6CB6 (V1). Low side to chassis.	57MC (10MC Sweep)	55.25MC 59.75MC	2	See instructions above	A15, A16	Adjust for response curve similar to Fig. 4
9.	"	"	213MC	211.25MC 215.75MC	13	"	L9, L11	Adjust for response curve within the limits of Figs 5 & 6. The coils are adjusted by unsoldering the junction of the crossed wires and changing the junction of the crossed wires. After adjustment resolder the junction
10.	"	"	207MC (10MC Swp.)	205.25MC 209.75MC	12	"		Check all channels for response within the limits of figs. 4 & 5. If necessary make compromise adjustments of A15, A16, L9, L11
			201MC (10MC Swp.)	199.25MC 203.75MC	11			
			195MC (10MC Swp.)	193.25MC 197.75MC	10			
			189MC (10 MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

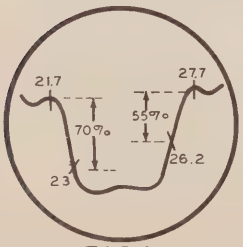


FIG.1

FIG. 2

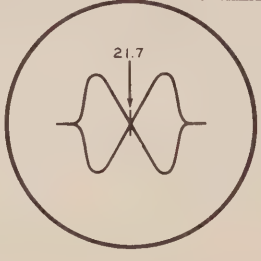


FIG. 3

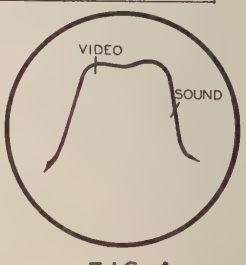


FIG. 4

PROPERTY OF

TV ALIGNMENT INSTRUCTIONS (CONT.)

ANTENNA ALIGNMENT

Resolder C16 to pin 1 of RF amp. (V1).
Connect the sweep generator through a 10 db resistance attenuator having a characteristic impedance of 72 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	10 db. attenuator (See instructions above.)	Across antenna terminals	57MC (10MC Swp)	55.25MC 59.75MC	2	Vert. Amp. to pin 5 of V2. Low side to chass is.	A17	Adjust for response curve similar to fig. 6
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"	L6	Adjust as described in step 9 for response similar to fig. 6
13.	"	"	207MC (10MC Swp)	205.25MC 209.75MC	12	"		Check for response curves within the limits shown in fig. 6 & 7.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

IF TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
14.	Direct	Across antenna terminals.	21.7MC	Any	DC probe to point (A) Common to chassis	A18	Adjust for minimum deflection.

4.5MC TRAP ADJUSTMENT

After alignment is completed and set restored to original operation tune in a strong TV signal and examine picture for 4.5MC interference (grain appearance in the horizontal lines).
If interference is present adjust A26 for minimum interference.

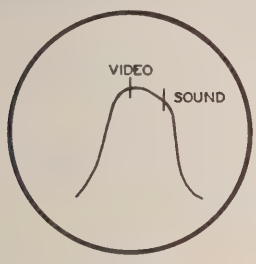


FIG.5

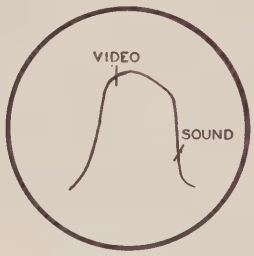


FIG.6

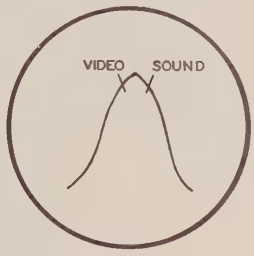


FIG.7

RADIO ALIGNMENT INSTRUCTIONS

RADIO ALIGNMENT INSTRUCTIONS

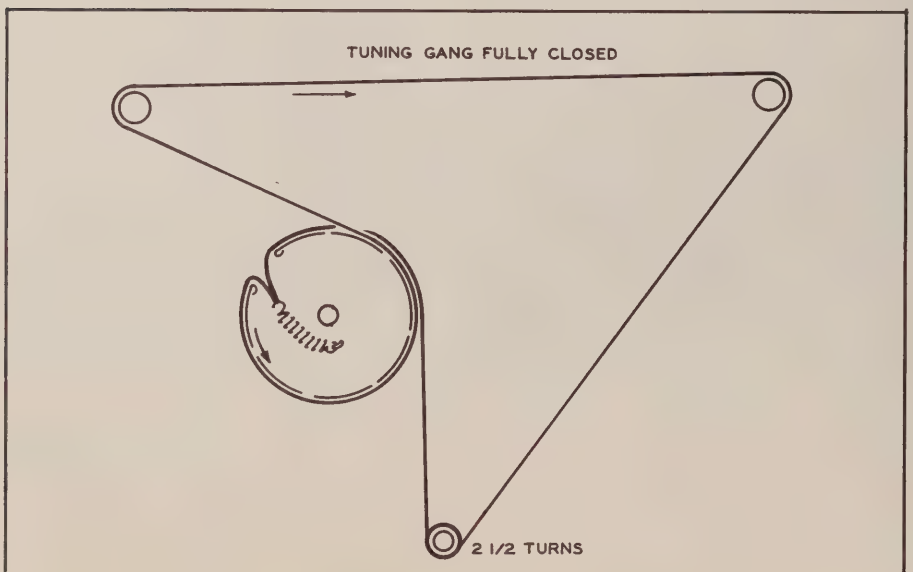
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Turn the function selector switch to "Radio" (third position clockwise)
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
15	.01MFD	High side to pin 7 (grid) of 6BE6 (V26). Low side to chassis.	455 KC (400∿ Mod.)	A.M.	Point of nonin-terference near low freq. end of dial.	Across voice Coil	A19 A20, A21 A22	Adjust for maximum output.
16.	250MMF	High side to terminal "A" Low side to chassis.	1650 KC	"	Tuning gang fully open	"	A23	"
17.	"	"	1500 KC	"	Tune to 1500 KC signal	"	A24	"
18.	"	"	600 KC	"	Tune to 600 KC signal	"	A25	Adjust A25 for maximum output while rocking tuning gang about 600 KC point of dial. Repeat step 16, 17 and 18 until no further improvement is made.

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	130KΩ	47Ω	0Ω	1.3Ω	†12KΩ	27KΩ	0Ω		
V 2	6AK5	90KΩ	500Ω	.1Ω	0Ω	†20KΩ	†20KΩ	500Ω		
V 3	6J6	†22KΩ	0Ω	.1Ω	0Ω	0Ω	12KΩ	0Ω		
V 4	6CB6	213KΩ	47Ω	0Ω	.1Ω	†12KΩ	†12KΩ	0Ω		
V 5	6CB6	200KΩ	47Ω	0Ω	.1Ω	†14KΩ	†14KΩ	0Ω		
V 6	6CB6	15KΩ	100Ω	.1Ω	0Ω	†13KΩ	†53KΩ	0Ω		
V 7	6AL5	0Ω	5.3KΩ	.1Ω	0Ω	600Ω	0Ω	130KΩ		
V 8	6AU6	5.3KΩ	0Ω	.1Ω	0Ω	†16KΩ	15KΩ	0Ω		
V 9	12AU7	†4.5KΩ	560KΩ	100Ω	.1Ω	.1Ω	50KΩ	0Ω	330KΩ	0Ω
V 10	6AU6	†45KΩ	†13KΩ	.1Ω	0Ω	150KΩ	†18KΩ	†13KΩ		
V 11	6BA6	215KΩ	0Ω	0Ω	.1Ω	†5.6KΩ	†41KΩ	82Ω		
V 12	6AU6	.2Ω	0Ω	0Ω	.1Ω	†17KΩ	†17KΩ	150Ω		
V 13	6AL5	15KΩ	15KΩ	.1Ω	0Ω	530KΩ	0Ω	530KΩ		
V 14	6SQ7	0Ω	4.7Meg	0Ω	0Ω	0Ω	¶400KΩ	.1Ω	0Ω	
V 15	6K6GT	0Ω	.1Ω	¶485Ω	¶235Ω	680KΩ	¶68KΩ	0Ω	680Ω	
V 16	6SN7GT	330KΩ	†30KΩ	0Ω	900KΩ	950KΩ	0Ω	0Ω	.1Ω	
V 17	6S4	INF	1.5KΩ	1.2Meg	0Ω	.1Ω	1.2Meg	INF	INF	#4KΩ
V 18	6SN7GT	2.4Meg	2.4Meg	6.2KΩ	2.4Meg	†10KΩ	4.7KΩ	.1Ω	0Ω	
V 19	6SN7GT	230KΩ	†68KΩ	0Ω	1Meg	30KΩ	260KΩ	.1Ω	0Ω	
V 20	6CD6G	INF	0Ω	180Ω	560KΩ	560KΩ	†68KΩ	.1Ω	#30KΩ	TOP CAP #50Ω
V 21	6W4GT	INF	INF	280KΩ	~~†110Ω~~	†110Ω	INF	#12Ω	#12Ω	
V 22	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #212Ω
V 23	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP INF
V 24	5U4G	INF	18KΩ	INF	60Ω	INF	62Ω	INF	18KΩ	
V 25	6X4	55Ω	INF	.1Ω	0Ω	INF	56Ω	11KΩ		
V 26	6BE6	22KΩ	.6Ω	■.1Ω	■0Ω	■†5.6KΩ	■†20KΩ	■2.9Meg		
V 27	6BA6	■2.9Meg	0Ω	■.1Ω	■0Ω	■†5KΩ	■35KΩ	68Ω		
V 28	6SQ7	0Ω	0Ω	0Ω	550KΩ	550KΩ	0Ω	■0Ω	■.1Ω	
V 29	19AP4	0Ω	1.5Meg	PIN 10 †2.3KΩ	PIN 11 5KΩ	PIN 12 .1Ω				

ALL MEASUREMENTS TAKEN IN TV POSITION UNLESS NOTED
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 2 OF V24
¶ MEASURED FROM PIN 7 OF V25
■ MEASURED IN AM POSITION
MEASURED FROM PIN 3 OF V21



DIAL CORD STRINGING

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Pre-set the adjustments as follows:

Set the horizontal lock trimmer (B3) 1/4 turn out from maximum clockwise position.

Set the horizontal drive trimmer (B4) 1/4 turn out from maximum clockwise position.

Set the horizontal waveform adjustment (B2) three turns in from fully out (counter clockwise).

Set the horizontal frequency adjustment (B1) so exactly one inch of screw protrudes out of the can.

Turn the set on and tuen in a TV station, preferably a test pattern.

Connect the vertical input lead of an oscilloscope to the junction of R105 and C89. Connect low side to chassis.

Adjust B2 until the broad and narrow peaks of the waveform on the oscilloscope are within 15 percent of equal height as shown in fig. 8.

Adjust B1 until the picture synchronizes horizontally.

If the peaks of the waveform on the oscilloscope become more than 15% unequal, adjust B2 to keep them of approximately equal height.

Turn the horizontal hold control to maximum counter-clockwise. Momentarily interrupt the signal by tuning to another channel and back again.

Slowly turn the hold control clockwise and note the least number of diagonal bars present just before the picture synchronizes. If more than 3 bars are present turn B3 slightly clockwise.

If less than 3 bars are present at the pull in point turn B3 slightly counter-clockwise. Repeat the pull-in check and retouch B3, if necessary.

Adjust B2 until the broad and narrow peaks of the waveform on the scope are of equal height as shown in figure 8.

If necessary keep the picture in synchronization with the horizontal hold control while adjusting B2.

The horizontal drive trimmer B4 should not be adjusted unless a white bar appears in the center of the picture, or fails to fill the mask.

If a white bar is present in the picture, adjust B4 clockwise just enough to remove the white lines.

If the picture width is insufficient, adjust B4 counter clockwise just enough to fill the mask.

If B4 is changed it may be necessary to readjust B1.

Adjust the width slug (B5) until the picture fills the mask horizontally, if necessary retouch B4 for proper width.

Adjust the horizontal linearity slug (B6) until the picture is symmetrical from left to right.

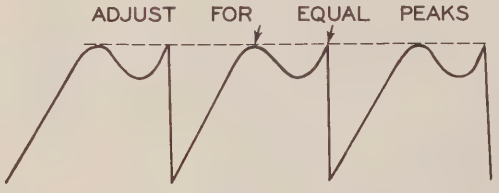
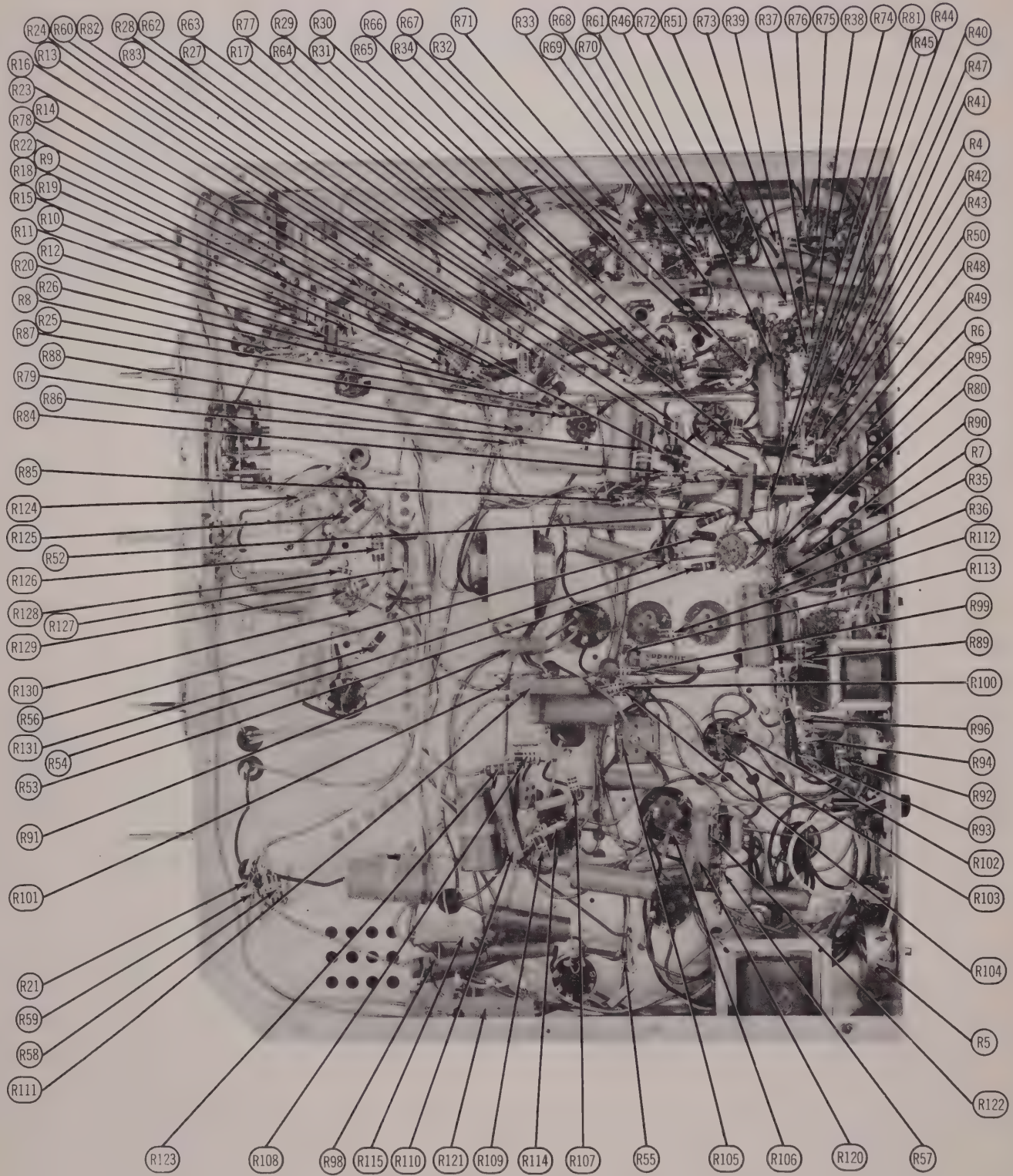
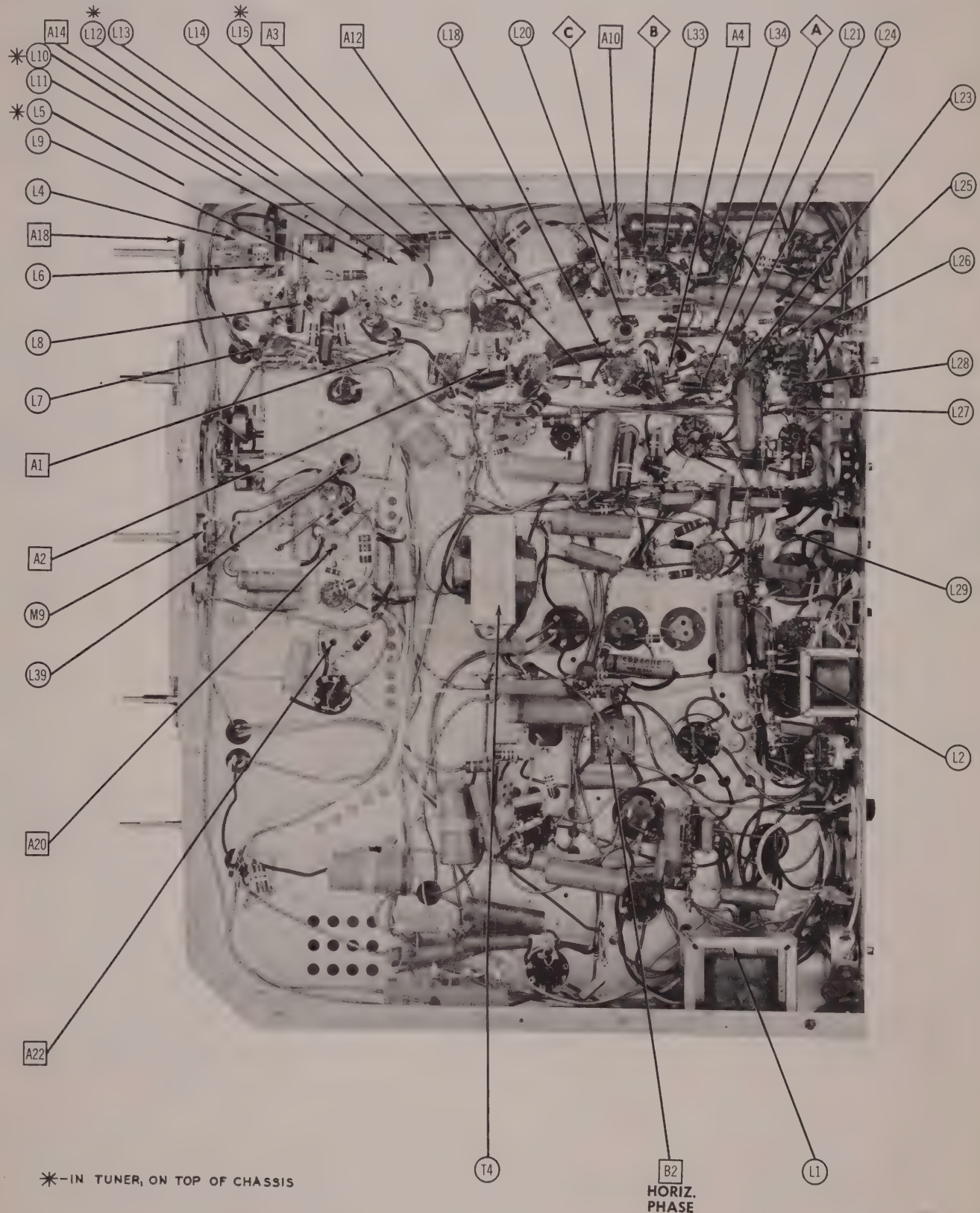


FIG. 8



CHASSIS BOTTOM VIEW- RESISTOR IDENTIFICATION



✳—IN TUNER, ON TOP OF CHASSIS

CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF

PARTS LIST AND DESCRIPTIONS

PROPERTY OF
L. F. SUMMERS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ANDREA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Mixer	6AK5	6AK5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st. Video IF Amp.	6CB6	6CB6	7CM	
V5	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V6	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Detector - AGC Clamper	6AL5	6AL5	6BT	
V8	1st. Video Amplifier	6AU6	6AU6	7BK	
V9	2nd. Video Amplifier-DC Restorer-Sync. Seperator	12AU7	12AU7	9A	
V10	Keyed AGC	6AU6	6AU6	7BK	
V11	1st. Sound IF Amp.	6BA6	6BA6	7BK	
V12	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V13	Ratio Detector	6AL5	6AL5	6BT	
V14	AF Amplifier	6SQ7	6SQ7	8Q	
V15	Audio Output	6V6GT	6V6GT	7AC	
V16	Sync. Amplifier - Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Vert. Output	6S4	6S4	9AC	
V18	Horiz. Sync. Amp. - Horiz. Sync. Limiter	6SN7GT	6SN7GT	8BD	
V19	Horiz. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V20	Horiz. Output	6CD6G	6CD6G	5BT	
V21	Damper	6W4GT	6W4GT	4CG	
C22	HV Rectifier	1B3GT	1B3GT	3C	
V23	HV Rectifier	1B3GT	1B3GT	3C	
V24	LV Rectifier	5U4G	5U4G	5T	
V25	LV Rectifier	6X4	6X4	5BS	
V26	AM Converter	6BE6	6BE6	7CH	
V27	AM IF Amplifier	6BA6	6BA6	7BK	
V28	Det.-AVC-AF Amp.	6SQ7	6SQ7	8Q	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: ANDREA PART No.	SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V29	19AP4	19AP4A		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ANDREA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	350	HCE-1331	AFH2-54		UP3335C		TVL-2759	● Filter
B	30	350							▲ Filter
C2A	40	500	HCE-1310	AFH2-72		UP4450		TVL-2830	▲ Filter
B	40	500							● Filter
C3A	20	450	HCE-1320	AFH2-69		UP2250		TVL-2755	▲ Decoupling
B	20	450							● Decoupling
C4A	20	450	HCE-1320	AFH2-69		UP2250		TVL-2755	▲ Decoupling
B	20	450							● Decoupling
C5	1000	25	HCE-1312-2	AFH1-10		UP1M-25		TVL-1230	Bias Filter
C6A	20	450	HCE-1319	AFH2-93		UPT245-1010		TVL-2810	● Vert. Output Dec.
B	100	100							▲ Vert. Output Cathode
C7	10	350	HCE-1332	AFH1-38		UP1045		TVL-1675	Decoupling
C8	10	350	HCE-1332	AFH1-38		UP1045		TVL-1675	Decoupling
C9A	4	450	HCE-1318	AFH2-46		UPT4D45		TVL-2750	■ Sync. Sep. Dec.
B	4	450							▲ AGC Cathode
C10	10	25	HCE-1329	PRS25/10		BR102A		TVA-1204	Audio Output Cathode
C11	2	25	HCE-1302	PRS150/4		BBR2-50T		TVA-1201	Stablilizing Cap.
C12	100		HCC-1933	SI100N750	TCN-100		N750L-101	5TCU-T1	Fixed Padder
C13	50		HCC-1929						Fixed Trimmer
C14	30		HCC-1934	SI30	D6-300		GP1K-300		Fixed Trimmer
C15	.7-7		HCV-2119		829-7				Variable Trimmer
C16	10		HCC-1923	SI10	D6-100		GP1K-100	5GA-Q1	RF Coupling
C17	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AGC Filter
C18	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Amp. Plate Dec.
C19	100		HCC-1933	SI100N750	TCN-100		N750L-101	5TCU-T1	RF Amp. Screen Bypass
C20	100		HCC-1922-1	SI100N750	TCN-100		N750L-101	5TCU-T1	RF Coupling
C21	.7-7		HCV-2119		829-7				Variable Trimmer
C22	125		HCC-1930						Mixer Grid Filter
C23	.5-3.3		HCV-2118		829-4				Variable Trimmer
C24	1.4		HCC-1931				N750K-1R4		Osc. Coupling
C25	1.5-7		HCV-2116		829-7				Variable Trimmer
C26	5.5		HCC-1925						Osc. Grid Cap.
C27	1000		HCC-1932	BPD-001	DD-102	TM5D1	801-001	5HK-D1	Mixer Plate Dec.
C28	1000		HCC-1938	BPD-001	DD-102	TM5D1	801-001	5HK-D1	Mixer Cathode Bypass
C29	1000		HCC-1938	BPD-001	DD-102	TM5D1	801-001	5HK-D1	Mixer Cathode Bypass
C30	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Mixer Fil. Bypass
C31	100		HCC-1922-1	SI100	D6-101	TM5T1	GP1K-101	5GA-T1	IF Coupling
C32	1000		HCC-1932	BPD-001	DD-102	TM5D1	801-001	5HK-D1	1st. Video IF Dec.
C33	100		HCC-1922-1	SI100	D6-101	TM5T1	GP1K-101	5GA-T1	IF Coupling
C34	1	100	HCT-1027-1			PJ2W1		2TM-M1	AGC Filter
C35	1000		HCC-1932	BPD-001	DD-102	TM5D1	801-001	5HK-D1	2nd. Video IF Dec.
C36	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Video IF Fil. Bypass
C37	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass
C38	100		HCC-1922-1	SI100N750	TCN-100		N750L-101	5TCU-T1	IF Coupling
C39	470		HCC-1935	SI470	D6-470		GP2K-471	5GA-T47	3rd. Video IF Plate
C40	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	3rd. Video IF Screen
C41	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	3rd. Video IF Cathode
C42	50						N750K-500		Fixed Trimmer
C43	100		HCC-1922-1	SI100N750	TCN-100		N750L-101	5TCU-T1	IF Coupling
C44	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Bias Filter
C45	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Video Det. Fil. Bypass
C46	5		HCC-1903	SI5NP0	TCZ-4.7		NP0K-4R7		Video Det. Filter

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	ANDREA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C47	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass *
C48	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	1st. Video Amp. Screen
C49	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C50	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C51	47			SI47NP0	TCZ-47		NP0L-470	5TCC-Q47	Fixed Trimmer
C52	.1	800	HCT-1002	P488-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C53	.05	400	HCT-1003	P488-1	DF-503	PTE4S5		4TM-S5	AGC Filter
C54	1	100	HCT-1027-1			PJ2W1		2TM-M1	AGC Filter
C55	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AVC Filter
C56	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Sound IF Plate
C57	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Sound IF Screen
C58	5000		HC C-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Sound IF Fil.
C59	1500		HCC-1936	BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	2nd. Sound IF Dec.
C60	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Sound IF Cathode
C61	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Sound IF Fil.
C62	330		HCC-1937	SI330	D6-331		6P2K-331	5GA-T33	Diode Load Cap.
C63	330		HCC-1937	SI330	D6-331		6P2K-331	5GA-T33	Diode Load Cap.
C64	330		HCC-1937	SI330	D6-331		6P2K-331	5GA-T33	Diode Load Cap.
C65	1500		HCC-1936	BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	De-Emphasis
C66	.01	400	HCT-1022	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C67	.1	600	HCT-1022	P888-1	DF-104	PTE6P1		6TM-P1	RF Bypass
C68	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C69	1500	500	HCM-1618-A	1468-0015	D6-152	TM5D15	GP2L-152	1FM-25	Tone Comp.
C70	.01	400	HCT-1022	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C71	.003	1000	HCT-1021	P1088-003		PTE16D3		MB-D3	Audio Output Plate
C72	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Audio Output Dec. *
C73	350	500	HCM-1634-C	1469-00025		5R5T25			Sync. Coupling
C74	.01	600	HCT-1008	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Sync. Coupling
C75	5000	500	HCM-1603-A	1467-005	D6-502	1D5D5	GP2-333-502	1FM-25	Vert. Integrator Net
C76	5000	500	HCM-1602-A	1467-005	D6-502	1D5D5	GP2-333-502	1FM-25	Vert. Integrator Net
C77	5000	1000	HCM-1602-AK						Vert. Integrator Net
C78	5000	1000	HCM-1602-AK						Vert. Osc. Grid Cap.
C79	.1	600	HCT-1002	P688-1	DF-104	PTE6P1		6TM-P1	RF Bypass
C80	.08	600	HCT-1029						Vert. Discharge
C81	.1	600	HCT-1002	P888-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C82	500	500	HCM-1625-A	1468-0005	D6-501	5W5T5	GP2K-501	1FM-35	Horiz. Sync. Coupling
C83	250	500	HCM-1624-C	1468-00025	D6-250	5W5T25	GP2K-251	1FM-325	Horiz. Sync. Coupling
C84	2000	500	HCM-1606-A	1467-002	D6-202	1W5D2	GP2-333-202	1FM-22	Horiz. Sync. Coupling
C85	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Horiz. AFC Filter
C86	.25	400	HCT-1015	P488-25		PTEP25		4TM-P25	Horiz. AFC Filter
C87	.02	600	HCT-1030	P888-02	DF-203	PTE6S2		6TM-S2	Horiz. AFC Filter
C88	250	500	HCM-1624-C	1469-00025		5R5T25			Horiz. Osc. Grid Cap.
C89	.01	600	HCT-1008	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Fixed Trimmer
C90	1000	500	HCM-1620-A	1464-001		1R5D1		MS-21	Horiz. Discharge
C91	2000	500	HCM-1606-A	1467-002	D6-202	1W5D2	GP2-333-202	1FM-22	Horiz. Sweep Coupling
C92	100	500	HCM-1601-A	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Horiz. Feedback
C93	100	500	HCM-1601-A	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Horiz. Feedback
C94	.1	400	HCT-1002	P488-1		PTE4P1		4TM-P1	Horiz. Output Screen
C95	1	100	HCT-1027-1			PJ2W1		2TM-M1	Horiz. Output Cathode
C96	300	1500	HCM-1627-B						Voltage Divider
C97	300	1500	HCM-1627-B						Voltage Divider
C98	.1	200	HCT-1002	P288-1		PJ2P1		2TM-P1	Damper Filter
C99	.03	600	HCT-1032	P688-03		PTE6S3		6TM-S3	Damper Filter
C100	500	10000	HCH-2701-1	HV10A	TV1-501	MM-A10T5	410-501	50IC1	HV Doubler
C101	.00047	10000	HCH-2705	P10084-0005	TV1-501	PTE100T5	410-501	TVM-351	HV Filter
C102	.00047	10000	HCH-2705	P10084-0005	TV1-501	PTE100T5	410-501	TVM-351	HV Filter
C103	.1	600	HCT-1002	P888-1	DF-104	PTE6P1		6TM-P1	Horiz. Sweep Coupling
C104	.25	400	HCT-1015	P488-25		PTE4P25		4TM-P25	Picture Tube Cathode
C105	.05	400	HCT-1003	489GZXY-05		PJ4S5		4TM-S5	Line Filter
C106	.05	400	HCT-1003	489GZXY-05		PJ4S5		4TM-S5	Line Filter
C107	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Horiz. Output Screen *
C108	5000		HCC-1926	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Fil. Bypass *
C109	.01	400	HCT-1022	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	RF Coupling
C110	100	500	HCM-1601A	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Osc. Grid Cap.
C111	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Osc. Anode Bypass
C112	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	Conv. Plate Dec.
C113	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C114	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	IF Amp. Plate Dec.
C115	.05	400	HCT-1003	P488-05	DF-503	PTE4S5		4TM-S5	IF Amp. Screen Bypass
C116	.1	200	HCT-1013	P288-1	DF-104	PJ2P1		2TM-P1	IF Amp. Cathode Bypass

* Not used in all models

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	ANDREA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	50KΩ	½	GRV-831	Bll-123 *	RTV-75		Horiz. Hold Control - Panel
B	1Meg	½		Bll-137 *			Vert. Hold Control - Rear
C	Shaft end.		Not Req.	E187 *			Attach per instructions in"Concentrikit"
R2A	20KΩ	4	GRV-834		RTV-300		Brightness Control - Wire Wound - Panel
B	5000Ω						Contrast Control - Rear
R3A	500KΩ		GRV-830		AG-60-Z	B-60-S	Volume Control
B	Shaft		Not Req.		FS-3	Not Req.	Attach to R3A per instructions
C	Switch		Not Req.		SWB	Not Req.	Attach to R3A per instructions
R4A	2Meg	½	GRV-812-1	QU-139	AG-83-S	AN-75	Height Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5	10KΩ	4	GRV-833		RTV-186	SVP-995	Focus Control - Wire Wound
R6	2000Ω	2	GRV-824	WK-2000	43-2000	VK-131	Vert. Linearity Control-Wire Wound
R7	20Ω	2	GRV-810-1	W-20X10	RTV-98	SVT-901	Vert.Centering Control-Tapped ②10Ω - Wire Wound

* Additional Parts to be used with Concentrikit

RESISTORS

ITEM No.	RATING RESISTANCE		RATING WATTS	ANDREA PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R8	1000Ω	5%	1	GRC-245	BTA-1000	AGC Network
R9	47Ω	5%	½	GRC-211		RF Amp. Cathode
R10	47KΩ	5%	1	GRC-207		Voltage Divider
R11	47KΩ	5%	1	GRC-207		RF Amp. Screen
R12	10KΩ		2	GRC-267		RF Amp. Plate
R13	90KΩ	5%	½			Mixer Grid - See Note 1
R14	470Ω	5%	½	GRC-213	BTS-470 5%	Mixer Cathode
R15	18KΩ	5%	1	GRC-308		Mixer Decoupling

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ANDREA PART No.	IRC PART No.	IDENTIFICATION CODES
R16	12KΩ	½	GRC-272		Osc. Grid
R17	22KΩ 5%	½	GRC-300		Osc. Plate
R18	15KΩ 5%	½	GRC-223		1st. Video IF Amp. Grid
R19	47Ω	½	GRC-211		1st. Video IF Amp. Cathode
R20	10KΩ	½	GRC-267		1st. Video IF Amp. Decoupling
R21	100KΩ	½	GRC-225	BTS-100K	AGC Network
R22	5.1Ω	½	GRC-292		Parasitic Suppressor - Wire Wound
R23	4700Ω 5%	1	GRC-273	BTA-4700 5%	2nd. Video IF Amp. Grid
R24	47Ω	½	GRC-211		2nd. Video IF Amp. Cathode
R25	10KΩ	2	GRC-267		2nd. Video IF Amp. Decoupling
R26	2200Ω	½	GRC-219	BTS-2200	2nd. Video IF Amp. Decoupling
R27	15KΩ 5%	½	GRC-223		3rd. Video IF Amp. Grid
R28	100Ω	½	GRC-216	BTS-100	3rd. Video IF Amp. Cathode
R29	47KΩ 5%	½	GRC-207		3rd. Video IF Amp. Screen
R30	1000Ω 5%	½	GRC-245	BTS-1000 5%	3rd. Video IF Amp. Decoupling
R31	10KΩ	2	GRC-267		3rd. Video IF Amp. Plate
R32	33KΩ	1	GRC-203	BTS-33K	Video Peaking Coil Shunt
R33	4700Ω 5%	½	GRC-273	BTS-4700 5%	Video Det. Diode Load
R34	1000Ω	½	GRC-210	BTS-1000	Video Det. Diode Load
R35	2200Ω	½	GRC-219	BTS-2200	Video Det. Diode Load
R36	3900Ω 5%	½	GRC-303	BTS-3900 5%	Bias Network
R37	20KΩ 5%	½	GRC-261	BTS-20K 5%	Video Peaking Coil Shunt
R38	47KΩ 5%	1	GRC-207	BTA-47K 5%	Voltage Divider
R39	3900Ω 5%	1	GRC-249	BTA-3900 5%	1st. Video Amp. Screen
R40	3900Ω 5%	1	GRC-262	BTA-3900 5%	1st. Video Amp. Plate
R41	6800Ω	2	GRC-257	BTB-6800	1st. Video Amp. Decoupling
R42	560KΩ	1		BTA-560K 5%	2nd. Video Amp. Grid - See Note 2
R43	680Ω 5%	½	GRC-221	BTS-6800 5%	2nd. Video Amp. Cathode
R44	10KΩ	½	GRC-304	BTS-10K	Video Peaking Coil Shunt
R45	3300Ω	1	GRC-254	BTA-3300	2nd. Video Amp. Plate
R46	4700Ω 20%	½	GRC-205	BTS-4700	Isolation
R47	330KΩ	1	GRC-301	BTA-330K	DC Restorer Cathode
R48	47KΩ 5%	1	GRC-207	BTA-47K 5%	Voltage Divider
R49	820KΩ	½	GRC-246	BTS-820K	DC Restorer Plate
R50	1.2Meg 5%	2		BTB-1.2Meg 5%	Picture Tube Grid - See Note 3
R51	33KΩ 5%	1	GRC-203	BTS-33K 5%	Keyed AGC Grid
R52	33KΩ	1		BTA-33K	Keyed AGC Cathode - See Note 4
R53	47KΩ 5%	1	GRC-207	BTA-47K 5%	Keyed AGC Plate
R54	100KΩ 20%	½	GRC-258	BTS-100K	Voltage Divider
R55	33KΩ 5%	½		BTS-33K 5%	Voltage Divider - See Note 5
R56	22KΩ	1	GRC-300	BTA-22K	Keyed AGC Screen
R57	820KΩ	½	GRC-246	BTS-820K	AGC Network
R58	470KΩ 5%	2	GRC-228	BTB-470K 5%	AGC Network
R59	33KΩ 5%	½	GRC-203	BTS-33K 5%	AGC Network
R60	100KΩ	½	GRC-225	BTS-100K	AVC Network
R61	100KΩ 20%	½	GRC-225	BTS-100K	AVC Network
R62	82Ω	2	GRC-215	BTS-82	1st. Sound IF Amp. Cathode
R63	39KΩ	2	GRC-306		1st. Sound IF Amp. Screen
R64	3300Ω	2	GRC-254	BTB-3300	1st. Sound IF Amp. Plate Decoupling
R65	150Ω	½	GRC-202	BTS-150	2nd. Sound IF Amp. Cathode
R66	15KΩ	2	GRC-237		2nd. Sound IF Amp. Decoupling
R67	22Ω	2	GRC-307		Balancing
R68	1000Ω 5%	½	GRC-245	BTS-1000 5%	Ratio Det. Diode Load
R69	15KΩ 5%	½	GRC-223	BTS-15K 5%	Ratio Det. Diode Load
R70	15KΩ 5%	½	GRC-223	BTS-15K 5%	Ratio Det. Diode Load
R71	33KΩ 5%	½	GRC-203	BTS-33K 5%	De-emphasis
R72	4.7Meg 5%	1	GRC-242	BTS-4.7Meg5%	AF Amp. Grid
R73	330KΩ	1	GRC-301	BTA-330K	AF Amp. Plate
R74	68KΩ 20%	½	GRC-297	BTS-68K	AF Amp. Plate Decoupling
R75	680KΩ	½	GRC-302	BTS-680K	Output Grid
R76	680Ω	½	GRC-297	BTS-680	Output Cathode
R77	330KΩ 20%	1	GRC-301	BTA-330K	Sync. Amp. Grid
R78	6800Ω	2	GRC-257	BTB-6800	Sync. Amp. Plate
R79	22KΩ	2	GRC-238	BTB-22K	Sync. Amp. Plate Decoupling
R80	15KΩ 5%	½	GRC-223	BTS-15K 5%	Integrator Network
R81	68000Ω 5%	½	GRC-221	BTS-6800 5%	Integrator Network
R82	680MΩ 5%	½	GRC-221	BTS-6800 5%	Integrator Network
R83	560KΩ	1		BTA-560K	Vert. Osc. Grid - See Note 2
R84	560KΩ	1	GRC-305	BTS-560K	Vert. Hold Control Shunt
R85	560KΩ	1		BTA-560K	Vert. Osc. Plate - See Note 2
R86	4700Ω	1	GRC-273	BTS-4700	Vert. Peaking
R87	1.2Meg 5%	2		BTB-1.2Meg 5%	Vert. Output Grid - See Note 3
R88	620Ω 5%	½		BTS-620 5%	Vert. Output Cathode - See Note 6
R89	2700Ω	2	GRC-275	BTB-2700	Bias Network
R90	20Ω	5	GRC-535	1 3/4A-20	Centering Network
R91	3000Ω	5	GRC-510	1 3/4A-3000	Decoupling
R92	4700Ω	1	GRC-284	BTA-4700	Horiz. Sync. Amp. Cathode
R93	62000Ω 5%	½		BTS-6200 5%	Horiz. Sync. Limiter Cathode - See Note 7
R94	470KΩ 5%	½	GRC-228	BTS-470K 5%	Horiz. Sync. Amp. Plate
R95	22KΩ 20%	½	GRC-201	BTS-22K	Integrator Network
R96	2.2Meg 5%	½	GRC-230	BTS-2.2Meg 5%	Horiz. Sync. Amp. Grid
R97	22KΩ 20%	½	GRC-201	BTS-22K	Voltage Divider
R98	150KΩ	½	GRC-243	BTS-150K	Voltage Divider
R99	150KΩ	½	GRC-243	BTS-150K	Horiz. AFC Cathode
R100	150KΩ	½	GRC-243	BTS-150K	Horiz. AFC Cathode
R101	10KΩ	½	GRC-304	BTS-10K	Horiz. AFC Filter
R102	820KΩ	½	GRC-246	BTS-820K	Horiz. AFC Grid
R103	3.3Meg	½	GRC-206	BTS-3.3Meg	Voltage Divider :
R104	100KΩ 20%	½	GRC-225	BTS-100K	Horiz. Osc. Grid
R105	8200Ω	½	GRC-285	BTS-8200	Horiz. Osc. Coil Shunt
R106	68KΩ 20%	½	GRC-204	BTS-68K	Horiz. Osc. Plate
R107	330KΩ	1	GRC-301	BTA-330K	Horiz. Feedback
R108	330KΩ	1	GRC-301	BTA-330K	Horiz. Feedback
R109	560KΩ	1		BTA-560K	Horiz. Output Grid - See Note 2
R110	180Ω	7	GRC-534		Horiz. Output Cathode
R111	30KΩ	10	GRC-530		Horiz. Output Screen
R112	560KΩ	1		BTA-560K	Voltage Divider - See Note 2
R113	560KΩ	1		BTA-560K	Voltage Divider - See Note 2
R114	4700Ω	½	GRC-205	BTS-4700	Parasitic Suppressor
R115	1000Ω	1	GRC-231	BTA-1000	Horiz. Linearity Coil Shunt
R116	560KΩ	1		BTA-560K	Voltage Divider
R117	560KΩ	1		BTA-560K	Voltage Divider
R118	560KΩ	1		BTA-560K	Voltage Divider
R119	560KΩ	1		BTA-560K	Voltage Divider
R120	500Ω	10	GRC-532		Surge Limiter
R121A	1100Ω				Voltage Divider
B	1100Ω	20	GRC-533		Voltage Divider
C	12KΩ				Voltage Divider
R122	75000Ω 5%	½	GRC-221	BTS-7500 5%	Voltage Divider - See Note 7

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ANDREA PART No.	IRC PART No.	IDENTIFICATION CODES
R123	6200Ω 5%	½		BTS-6200 5%	Voltage Divider-Cathode - See Note 7
R124	22KΩ	½	GRC-201	BTS-22K	AM Osc. Grid
R125	15KΩ	2	GRC-237	BTB-15K	AM Osc. Anode
R126	2700Ω	2	GRC-275	BTB-2700	AM Converter Decoupling
R127	2.2Meg	½	GRC-230	BTS-2.2Meg	AVC Network
R128	68Ω	½	GRC-214		AM IF Amp. Cathode
R129	33KΩ	1	GRC-281	BTA-33K	AM IF Amp. Screen
R130	2200Ω	½	GRC-219	BTS-2200	AM IF Amp. Plate Decoupling
R131	47KΩ	½	GRC-207	BTA-47K	Diode Filter

Note 1. Some Models use a 100KΩ Resistor in this application
Note 2. Some Models use a 470KΩ Resistor in this application
Note 3. Some Models use a 1Meg Resistor in this application
Note 4. Some Models use a 27KΩ Resistor in this application
Note 5. Some Models use a 47KΩ Resistor in this application
Note 6. Some Models use a 560Ω Resistor in this application
Note 7. Some Models use a 6800 Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	ANDREA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ②2.5A	800VCT .230ADC Tapped 550VCT .070ADC	5VAC ②3A	6.3VAC ②10A SEC.4 6.3VAC ②1.2A	ST-3035		P-3169 ②	

② Drill new Mtg. holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	ANDREA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	190Ω	1000Ω	ST-3029	A-8122	A-4003	TB0-2	Vert.Oscillator Trans.
T3	210Ω Tapped ②48Ω	64Ω Tapped ②53Ω SEC.2 .65Ω SEC.3 0Ω SEC.4 0Ω	ST-3036				Horiz. Output Trans.
T4	1000Ω	10Ω	ST-3025-1	A-8112 ①	A-3038	TS0-5	Vert.Output Trans.
T5A	12Ω		ST-3037	DY-8	MDF-70		Horiz. Deflection Coils
B	46Ω						Vert. Deflection Coils
T6	7KΩ		ST-3039				Focus Coil

① Drill One New Mounting Hole

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	ANDREA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	6KΩ	3.7Ω	250Ω	.3Ω		A-3878	A-3020	R0-9	

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	ANDREA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.230ADC	110Ω	3.7 Hy.	ST-3031	C-2326 ①	C-2991 ①	TR-3300 ①	① Drill one new mounting hole.
L2	.070ADC	235Ω	4 Hy.	ST-3038	C-1355 ①	C-2977 ②		

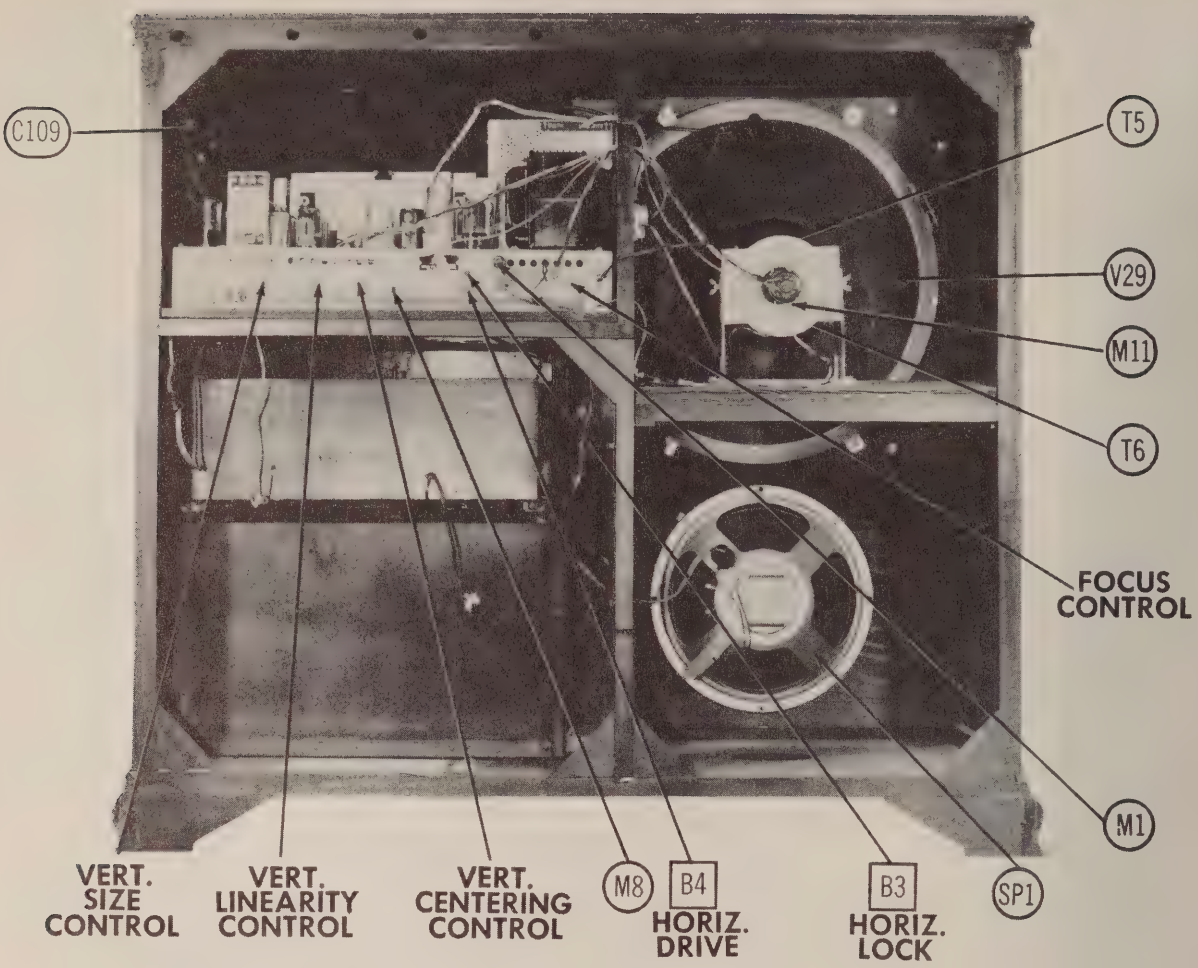
② Drill New Mounting Holes

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ANDREA PART No.	MERIT PART No.	IRC PART No.	NOTES
L3A	Ant. Matching Trans.	.4Ω	.6Ω	SUB-13			
L3B	Ant. Matching Trans.	.4Ω	.6Ω	SUB-13			
L4	Sound IF Trap	0Ω		SA-337			
L5	Ant. Coil	0Ω					
L6	Ant. End Inductor	0Ω		SA-341		CL-1	10 Microhenries
L7	RF Choke	8.2Ω		SA-330		CL-1	3.3 Microhenries
L8	Fil. Choke	2Ω					
L9	RF End Inductor	0Ω					
L10	RF Coil	0Ω					
L11	Mixer Grid End Inductor	0Ω					
L12	Mixer Grid	0Ω					
L13	Osc. End Inductor	0Ω		SA-318-1			
L14	Osc. Shunt	.2Ω		SA-316			
L15	Osc. Coil	0Ω					
L16	1st. Video IF	.2Ω		SA-331	TV-100		Includes 27.7MC Trap
L17	2nd. Video IF-Sound Take off	.2Ω	0Ω	SA-332	TV-107		
L18	Fil. Choke	0Ω		SA-280			
L19	3rd. Video IF	.3Ω		SA-333			Includes 21.7MC Trap
L20	Sound Trap	0Ω	0Ω	SA-287	TV-150		
L21	Fil. Choke	0Ω		SA-280			
L22	4th. Video IF	.2Ω		SA-334	TV-100		
L23	Peaking Coil	7Ω		SA-284			Yellow Dot
L24	Peaking Coil	6.4Ω		SA-285	TV-184		Green Dot
L25	Peaking Coil	7Ω		SA-284			Yellow Dot
L26	Peaking Coil	7Ω		SA-284			Yellow Dot
L27	Peaking Coil	7Ω		SA-284			Yellow Dot
L28	Peaking Coil	5.7Ω		SA-286	TV-184		Blue Dot

PARTS LIST CONTINUED ON PAGE 19

PROPERTY C
BLANKEN
3924 MEADE ST
DENVER, COLORADO



CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

1. Remove 8 push-on type, 2 set screw type control knobs from front panel.
2. Remove 17 wood screws holding rear cover. Remove rear cover.
3. Disconnect built-in antenna, phono leads. phono motor plug and speaker.
4. Disconnect picture tube socket, deflection yoke and focus plug.
5. Remove 2 wood screws holding A.C. interlock. Remove interlock.
6. Remove 4 nuts holding speaker. Remove speaker.
7. Remove H.V. lead to picture tube.
8. Remove one metal screw from top of H.V. cover holding ground lead. Remove ground lead.
9. Remove 2 metal screws holding loop antenna. Remove loop antenna from chassis.
10. Remove 3 chassis bolts. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	ANDREA PART No.	MERIT PART No.	IRC PART No.	
L29	4.5MC Trap	2.2Ω		SA-328	TV-151		
L30	Sound IF	.2Ω	.2Ω	SA-329	TV-104		
L31	Fil. Choke			SA-280			Not used in all Models
L32	Ratio Det.	.2Ω	.1Ω	SA-327	TV-111		Tap at .1Ω
L33	Cath. Choke	.1Ω		SA-278			
L34	Fil. Choke	0Ω					
L35	Horiz. Osc.	75Ω	46Ω	SA-335	TV-162		
L36	Width Coil	1.8Ω		SA-339			
L37	Horiz. Lin.	3Ω		SA-340			Tap at 1.8Ω
L38	Loop Ant.	.8Ω		SA-345			
L39	Osc. Coil	.7Ω	4.5Ω	SA-342	BC-381		
L40	Input IF	17Ω	17Ω	SA-343A	BC-352		
L41	Output IF	17.5Ω	18Ω	SA-344D			

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	ANDREA PART No.	VIKING PART No.	QUAM PART No.	
SP1A	P.M.	3.7Ω	SL-4013	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP1B	12"	1"				

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ANDREA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5A. 250V.	FM-5247		312005	342001	MTH5	HKP

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	ANDREA PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2		LQD-1J	Q Q-33			96	0-1 or S-1 and 0-3 or S-3	

ASTATIC AND ELECTRO VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		REMARKS
	ANDREA PART No.	WALCO PART No.	
M3		W-2A or W-2S and W-2MGA or W-2MGS	A-80 or A-81 and A-80LP or A-81LP

DIAL LIGHTS

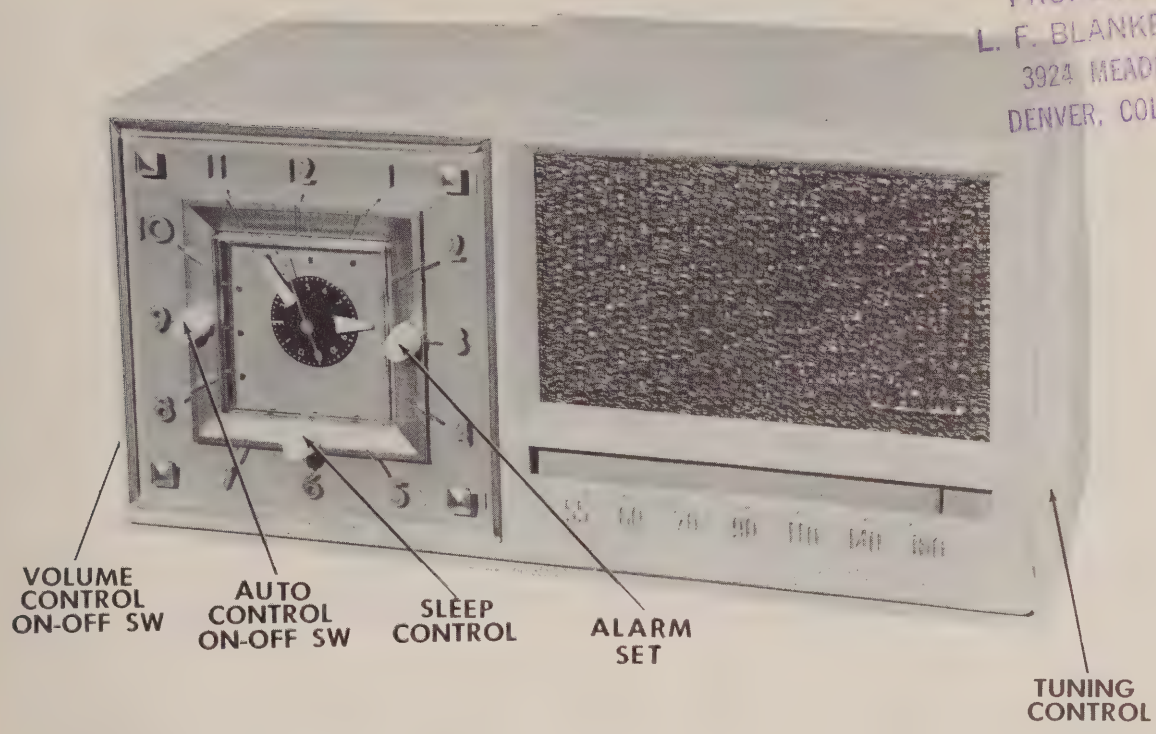
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ANDREA PART No.		
M4	Bayonet	6-8	.25	Blue			Type #44
M5	Bayonet	6-8	.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	ANDREA PART No.	NOTES
M6	RF Tuner	FM-5203	
M7	Switch	FM-5236	Function (TV-FM-AM-Phono)
M8	Switch	FM-5212	Metro - Fringe
M9	Switch	FM-5245	Tone
M10	Switch	FM-5105	Interlock
M11	Ion Trap	FM-5187	
M12	Tuning Cap	HCV-2112-1	AM Radio (14-427MMF - 14-427MMF)
B3, B4	Trimmer	HCV-2120	Horiz. Drive 200-530MMF, Horiz. Lock 15-170MMF
A24	Trimmer		AM Ant. 1.7-16MMF (Part of Loop)
A23	Trimmer	HCV-2121	AM Osc. 3-50MMF
A25	Trimmer	HCV-2122	AM Osc. Padder 210-560MMF

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

ARVIN
MODEL 657-T (Ch. RE307)



ARVIN
MODEL 657-T (Ch. RE307)

TRADE NAME	Arvin Model 657-T (Ch. RE-307)
MANUFACTURER	Arvin Industries, Columbus, Indiana
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (FIVE)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 or 12AV6 Det.-AVC-AF, 50C5 Audio Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING .275 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	530-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer at last notch at left end of dial back plate. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 7, (grid) of 12BE6 (V1) Low side to B-	455KC (400~ Mod.)	Tuning gang fully closed.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1650KC	Tuning gang fully open	"	A5	Adjust for maximum output.
3.		Loop	1400KC	Tune for maximum output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

ARVIN
MODEL 657-T(Ch. RE-307)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ARVIN PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	Alternate 12AV6 (7BT)
V4	Audio Output	5065	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ARVIN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	80	150		PRS150/80-40-20		EDL8415C		TVA-3430	Filter (Red) †
B	30	150							Filter (Blue)
C	20	25							Output Cathode (Green)
C2	.047	400		P488-047	DF-503	PTE4S47		4TM-S47	AVC Filter
C3A	250			SI250		5W5T25	GP2K-251	5GA-T25	Diode RF Filter
B	.01			BPD-01		TM5S1	B21-01	5HK-S1	Audio Coupling
C4A	.005								Audio Coupling
B	250				♦ PC-70				AF Amp. Plate Bypass
C	♦								Audio Output Grid
C5	68	500		1469-00007	D6-680	5W5Q7	GP1K-680	MS-47	Tone Comp.
C6	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Output Plate
C7	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C8	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Line Isolation

† Some Models use 50MFD in this application
‡ Items C3A, C3B, R5 are combined in one unit
♦ Items C4A, C4B, C4C, R6A, R6B are combined in one unit
When replacing items seperately, C4B and C4C should total 250MMF

CONTROLS

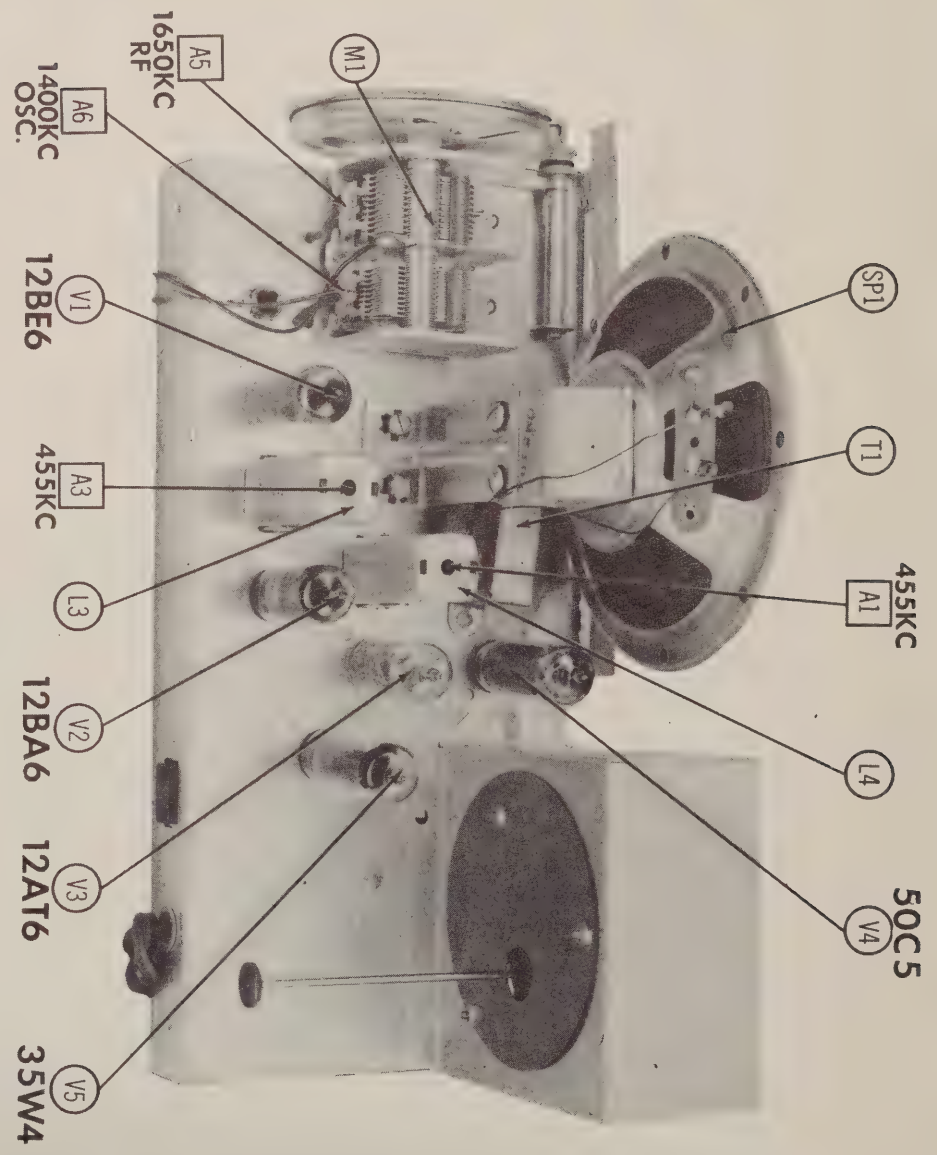
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	ARVIN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	C25197	Q13-137	AG-63-Z	B-70	Volume Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ARVIN PART No.	IRC PART No.	
R2	22KΩ	½			Osc. Grid
R3	47Ω	½			IF Amp. Cathode
R4	2.2Meg	½		BTS-2.2Meg	AVC Network
R5	4.7Meg	½	‡	BTS-4.7Meg	Diode Filter
R6A	470KΩ	½	♦	BTS-470K	AF Amp. Plate
B	470KΩ	½		BTS-470K	Output Grid
R7	2.2Meg	½		BTS-2.2Meg	Feedback Network
R8	120Ω	½		BTS-120	Output Cathode
R9	15Ω	½			Surge Limiter
R10	1200Ω	1		BTA-1200	Filter
R11	330KΩ	½		BTS-330K	Line Isolation

‡ Items R5, C3A, C3B are combined in one unit
▲ Items R6A, R6B, C4A, C4B, C4C are combined in one unit

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ	3.7Ω	190Ω	.4Ω		A-3332	A-3025		

SPEAKER

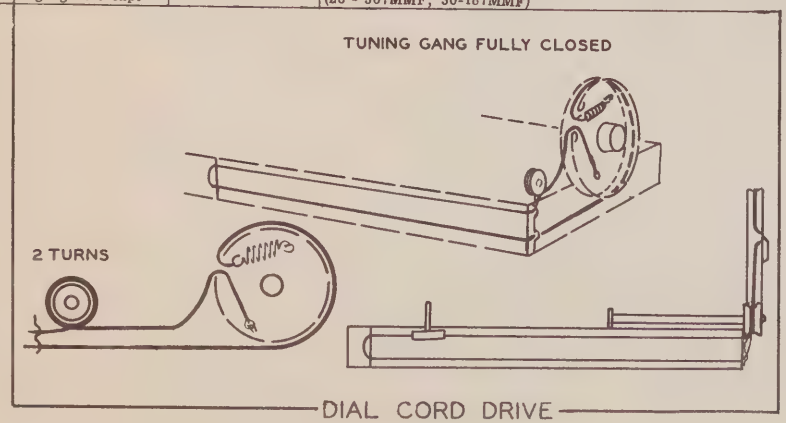
ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	ARVIN PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P M	3.7Ω	C25194	ST105 Mod. PX-5	5A07	
	CONE DIA.	V. C. DIA.				
SP1B	5"	9/16"				

COILS (RF-IF)

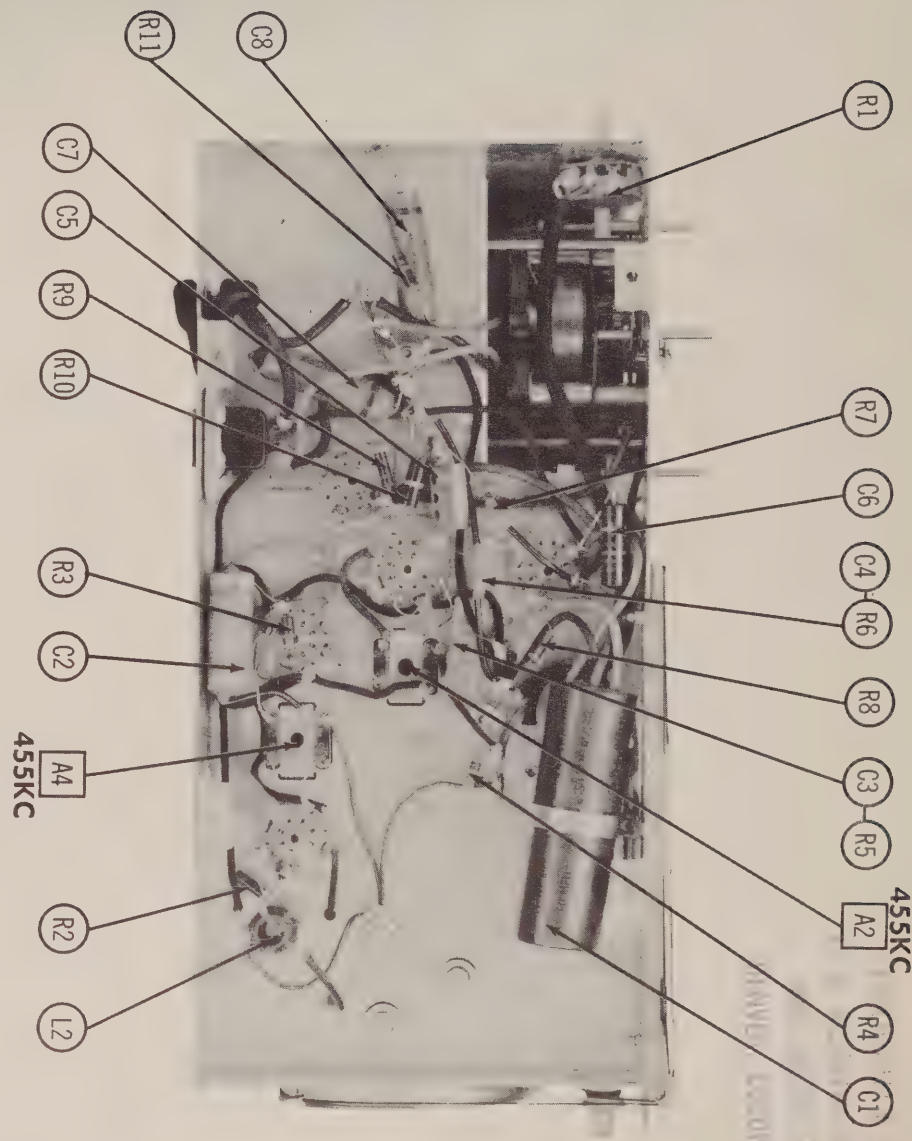
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ARVIN PART No.	MERIT PART No.	
L1	Loop Ant.	.4Ω				
L2	Osc. Coil	.4Ω	6Ω			
L3	Input IF	15Ω	15Ω		BC-352	
L4	Output IF	14Ω	14Ω		BC-353	

MISCELLANEOUS

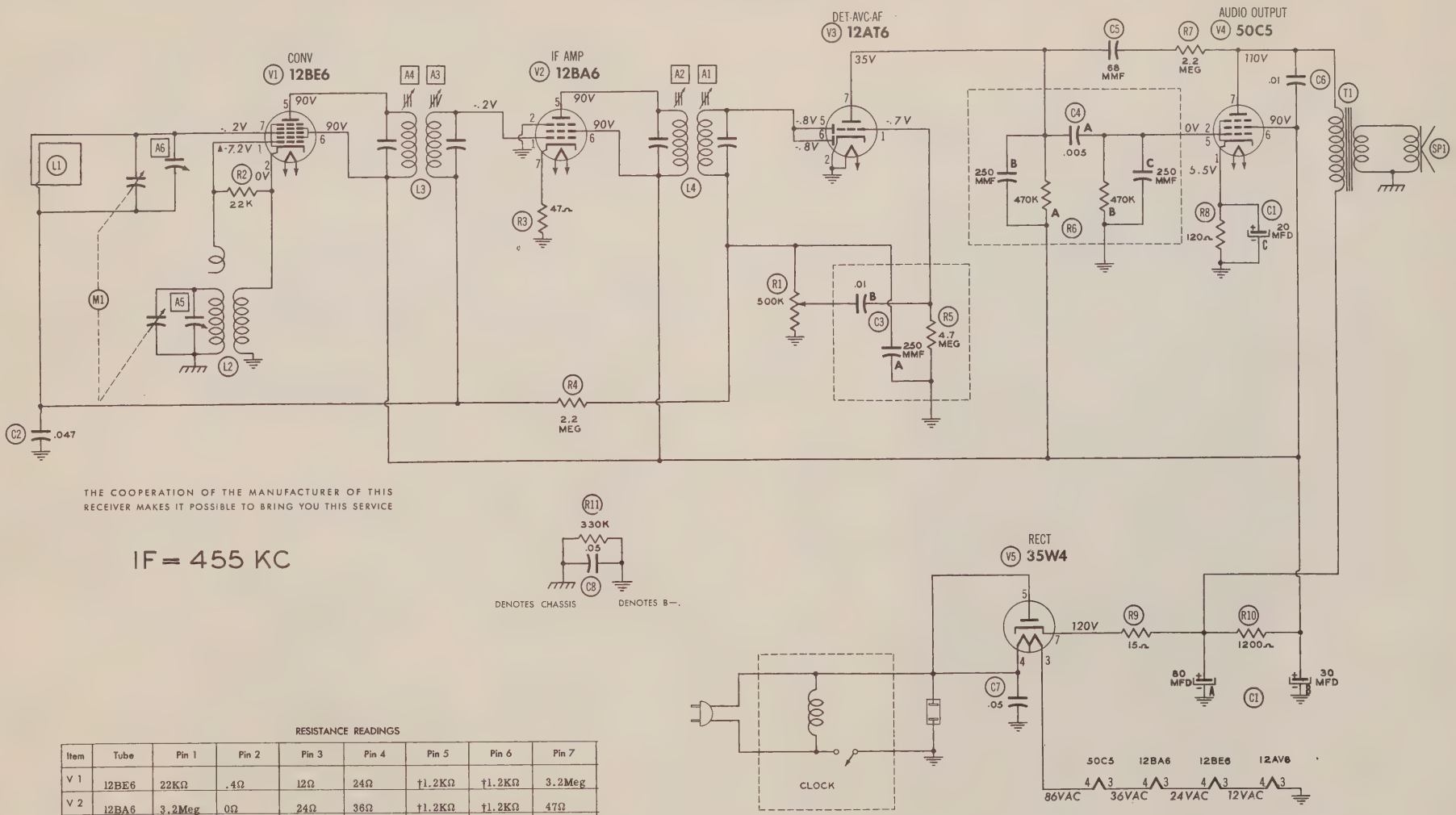
ITEM No.	PART NAME	ARVIN PART No.	NOTES
M1	2 gang var. cap.		(26 - 367MMF, 30-187MMF)



CHASSIS—BOTTOM VIEW



ARVIN MODEL 657 (Ch. RE-307)



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.4Ω	12Ω	24Ω	†1.2KΩ	†1.2KΩ	3.2Meg
V 2	12BA6	3.2Meg	0Ω	24Ω	36Ω	†1.2KΩ	†1.2KΩ	47Ω
V 3	12AT6	4.7Meg	0Ω	0Ω	12Ω	1Meg	1Meg	†470KΩ
V 4	50C5	120Ω	470KΩ	36Ω	86Ω	470KΩ	†1.2KΩ	†205Ω
V 5	35W4	†15Ω	INF	86Ω	121Ω	121Ω	103Ω	50KΩ

† MEASURED FROM PIN 7 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1952

168-5

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

CROSLEY MODELS DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch. 356-1, 356-2)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL DU-17CHB

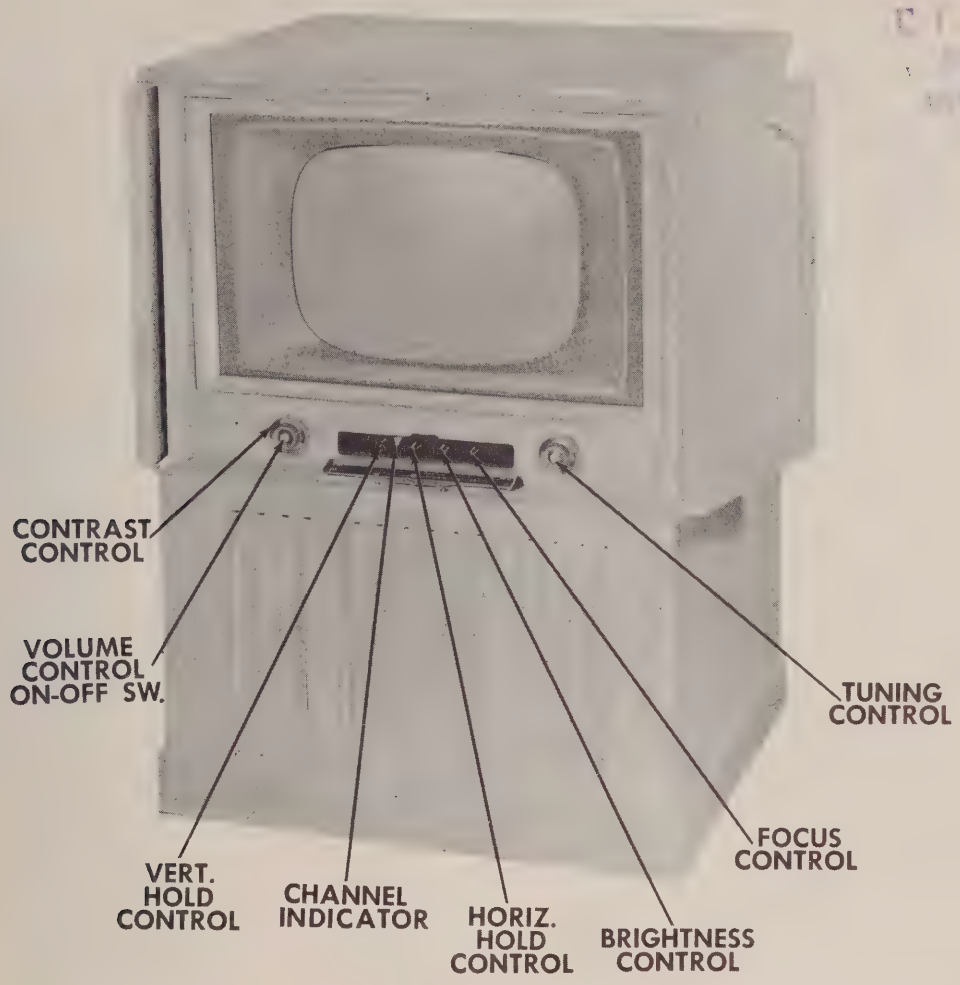
CROSLEY MODELS DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch. 356-1, 356-2)

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5-52 SET 168 FOLDER 6

CROSLEY MODELS DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch. 356-1, 356-2)



Crosley Model DU-17CHB

TRADE NAME	Crosley Models DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch.356-1, 356-2)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	Television Receiver
TUBES	Twenty-Two
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 1.9 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 continuous tuning

INDEX

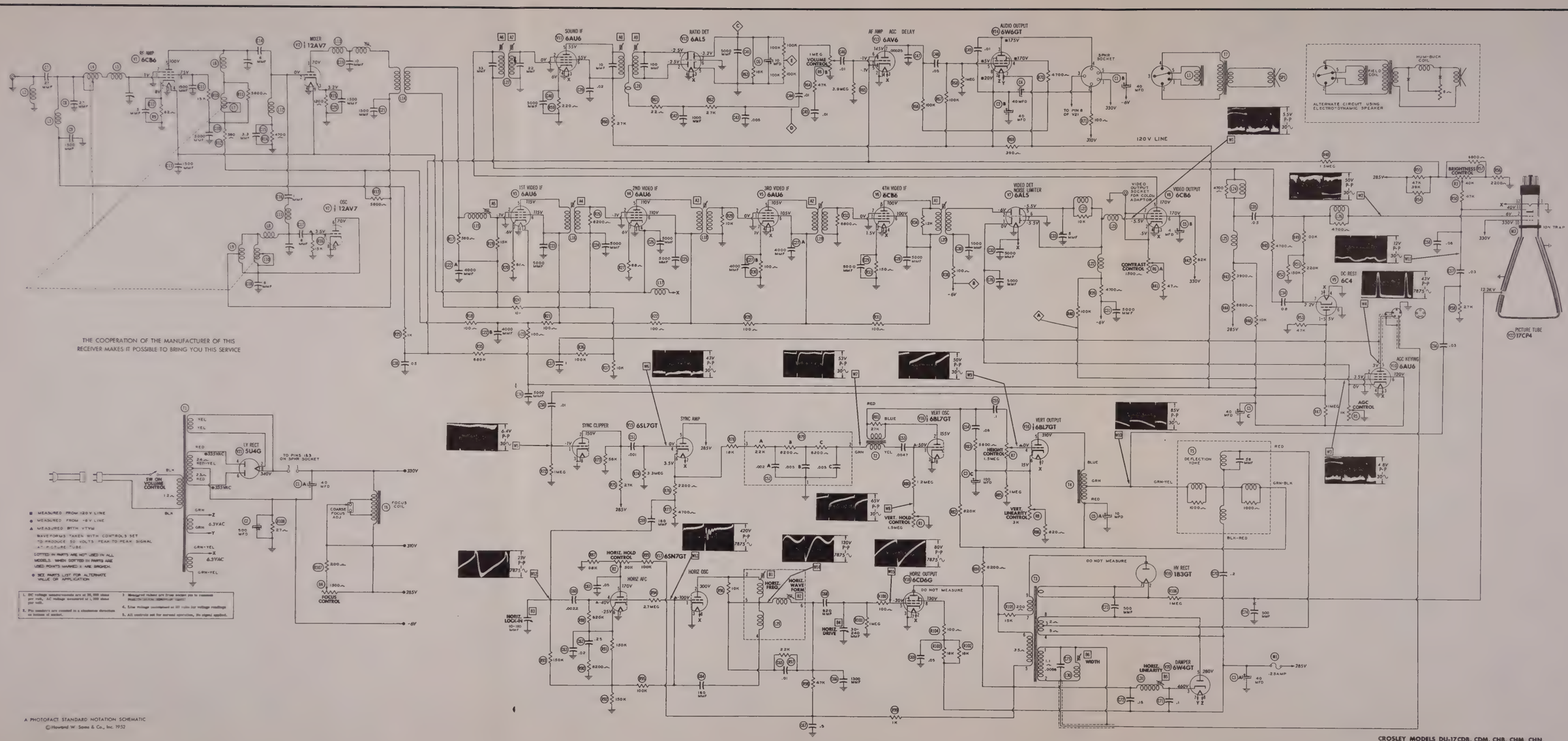
Alignment 8
Drive Cord Stringing 14
Disassembly Instructions 14
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13, 15
Photographs
- Cabinet - Rear View 11
- Capacitor & Alignment Identification 4, 9
- Chassis - Top View 3
- RF Tuner 10
- Resistor & Inductor Identification 6, 7

Resistance Measurements 14
Schematic 2
Tube Placement Charts 5

CROSLEY MODELS DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch. 356-1, 356-2)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

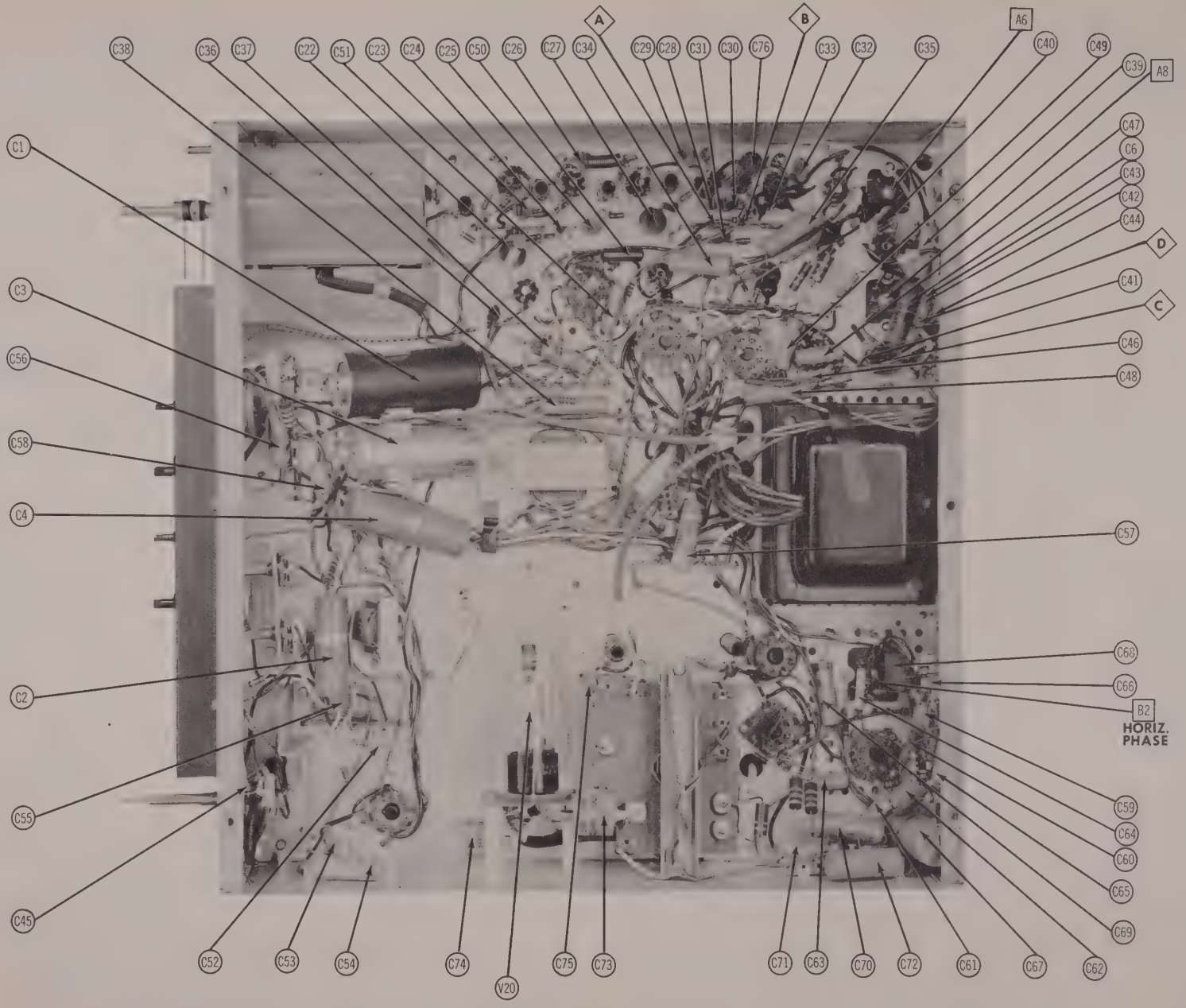
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1952
CROSLEY MODELS DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch. 356-1, 356-2)

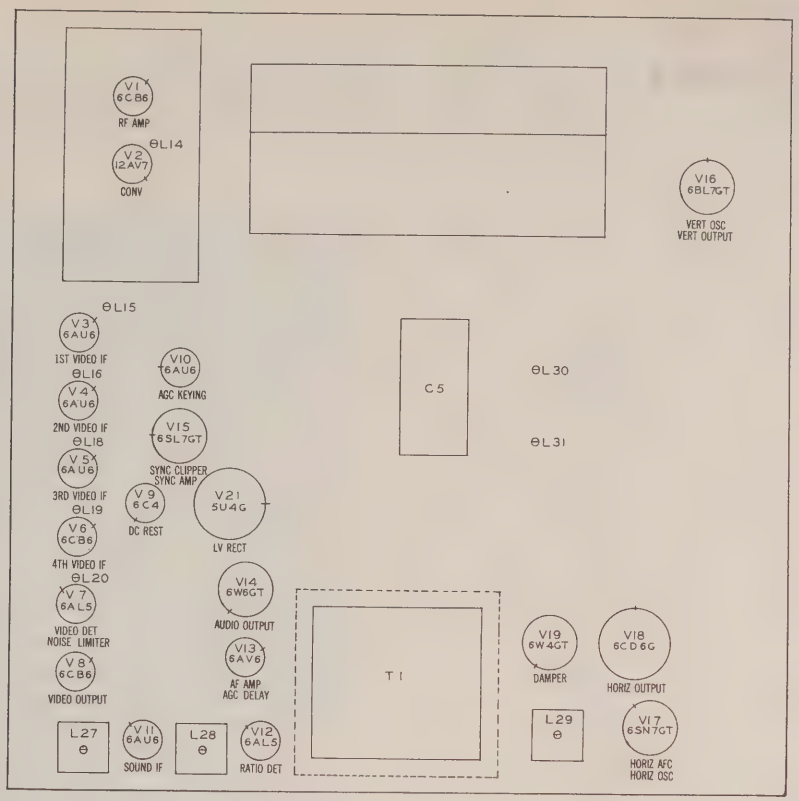
CROSLEY MODELS DU-17CDB, CDM, CHB, CHM, CHN, COB, COM, TOB, TOL, TOM (Ch. 356-1, 356-2)

PROPERTY OF
L. F. BLANKENSHIP
3084 MEADE ST.
DENVER, COLORADO

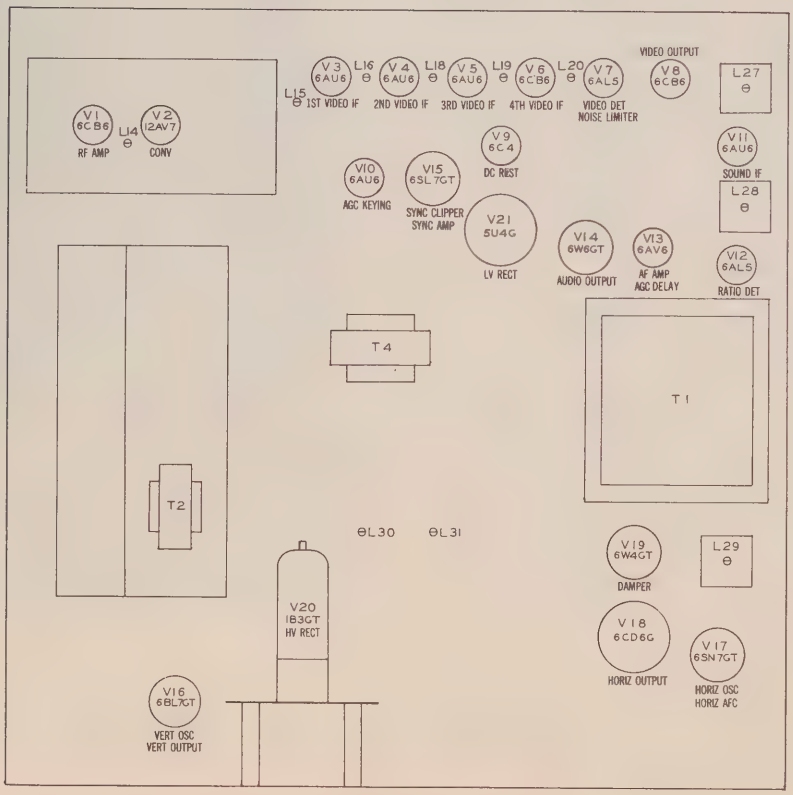
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



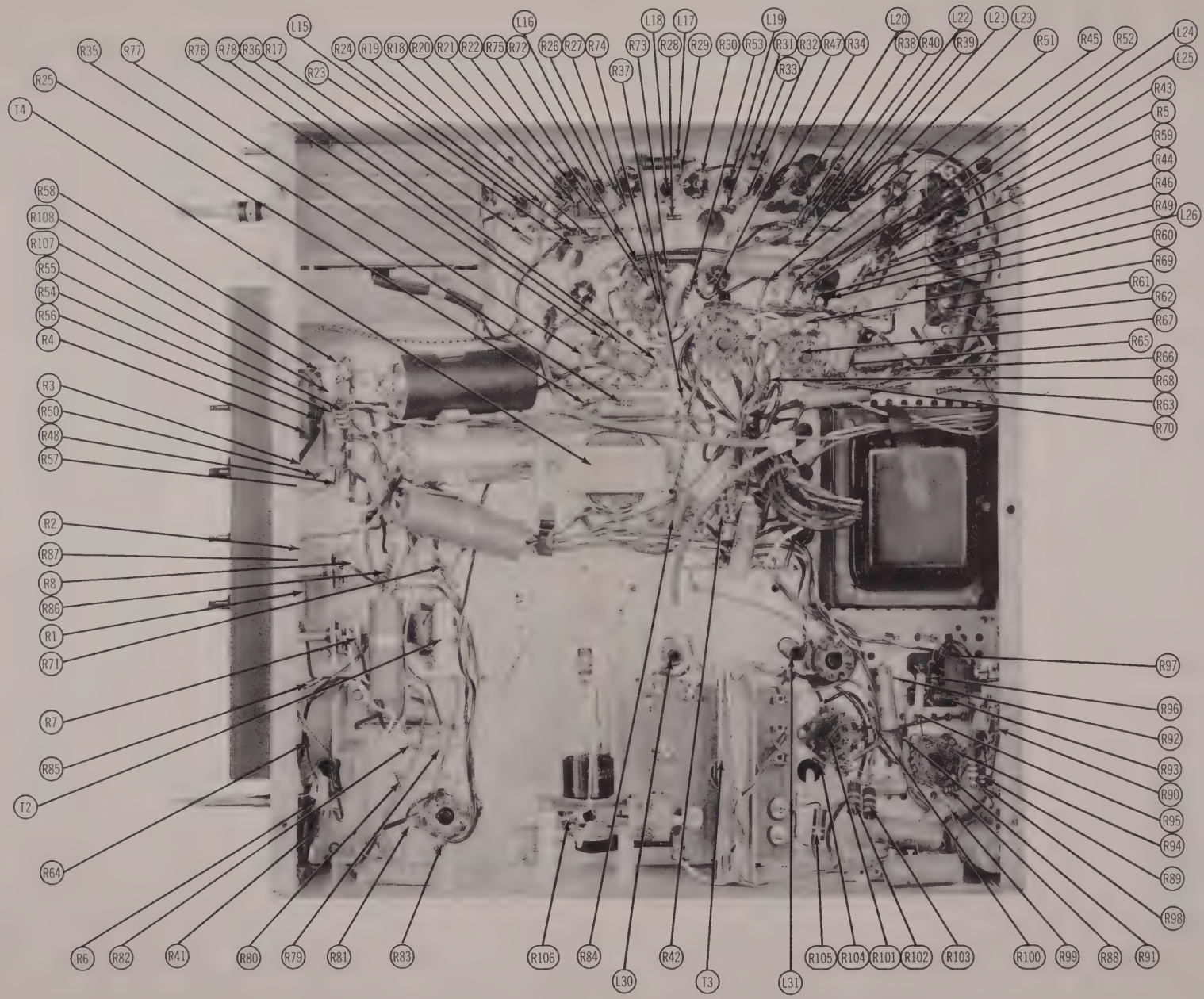
TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLO.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn the tuning control fully clockwise. Align the right hand edge of the pointer saddle to coincide with the indentation on the dial back plate on which the pointer rides.
The end of the high voltage lead should be securely taped and kept away from the chassis.
Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Tune set to point of non-interference. To check for interference turn tuning control slightly and observe VTVM for change in reading.
If present, tune to another position.
Connect the center terminal of a 5000 ohm potentiometer to the ungrounded side of R37.
Connect one terminal to the ungrounded side of R108 (-6 VDC).
Connect the other terminal to chassis.
Vary the setting of the potentiometer to obtain -3.5 volts at the grids of V3 and V4. Use VTVM for this reading.
Remove the RF Amplifier tube V1 to eliminate spurious response.
During video IF alignment the common lead of the VTVM is connected to a point -6V with respect to chassis. Avoid grounding the case of VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over converter tube (V2). Low side to chassis.	24MC (unmod.)	Point of non-interference.	DC probe to Point (A). Common to Point (B).	A1	Adjust for maximum deflection. Attenuate signal generator to limit deflection to 2 volts.
2.	"	"	22.2MC	"	"	A2	"
3.	"	"	26.55MC	"	"	A3	"
4.	"	"	22.9MC	"	"	A4	"
5.	"	"	25.5MC	"	"	A5	"

OVERALL VIDEO IF RESPONSE CHECK

Tune set to point of non-interference. To check for interference turn tuning control slightly and observe scope for change in response.
If present, tune to another position.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over converter tube (V2). Low side to chassis.	24MC (10MC swp.)	21.9MC 22,9MC 24MC 25.5MC 26.4MC	Point of non-interference.	Vertical amp. to Point (A). Low side to chassis.		Check for response similar to Fig. 1. If necessary adjust A1 through A5 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ(-1%) resistors in series from Point (C) to chassis. The junction of these two resistors is alignment Point (E) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001MFD	High side to Pin 1 (grid) of 6CB6 (V8). Low side to chassis.	4.5MC	Any channel not used locally.	DC probe to Point (C). Common to chassis.	A6, A7 A8	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to Point (D). Common to Point (E).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD	High side to Pin 1 (grid) of 6CB6 (V8). Low side to chassis.	4.5MC (450KC swp.)	4.5MC	Any channel not used locally	Vert. amp. to Point (C). Low side to chassis.	A6, A7 A8	Disconnect stabilizing capacitor C6. Adjust for maximum amplitude & Symmetry as per Fig. 2.
8.	"	"	"	"	"	Vert. amp. to Point (D). Low side to chassis.	A9	Reconnect capacitor C6. Adjust A9 so 4.5MC occurs in center of crossover lines as per Fig. 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

The tuner section of this receiver has been properly aligned at the factory and is very stable. Alignment of this section should not be required in the field.

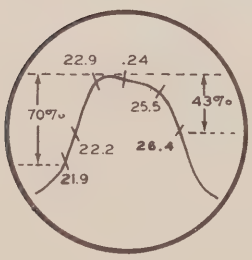


FIG. 1

FIG. 2

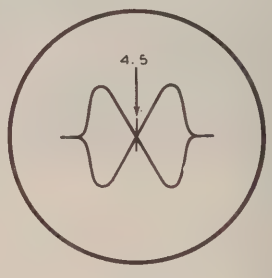
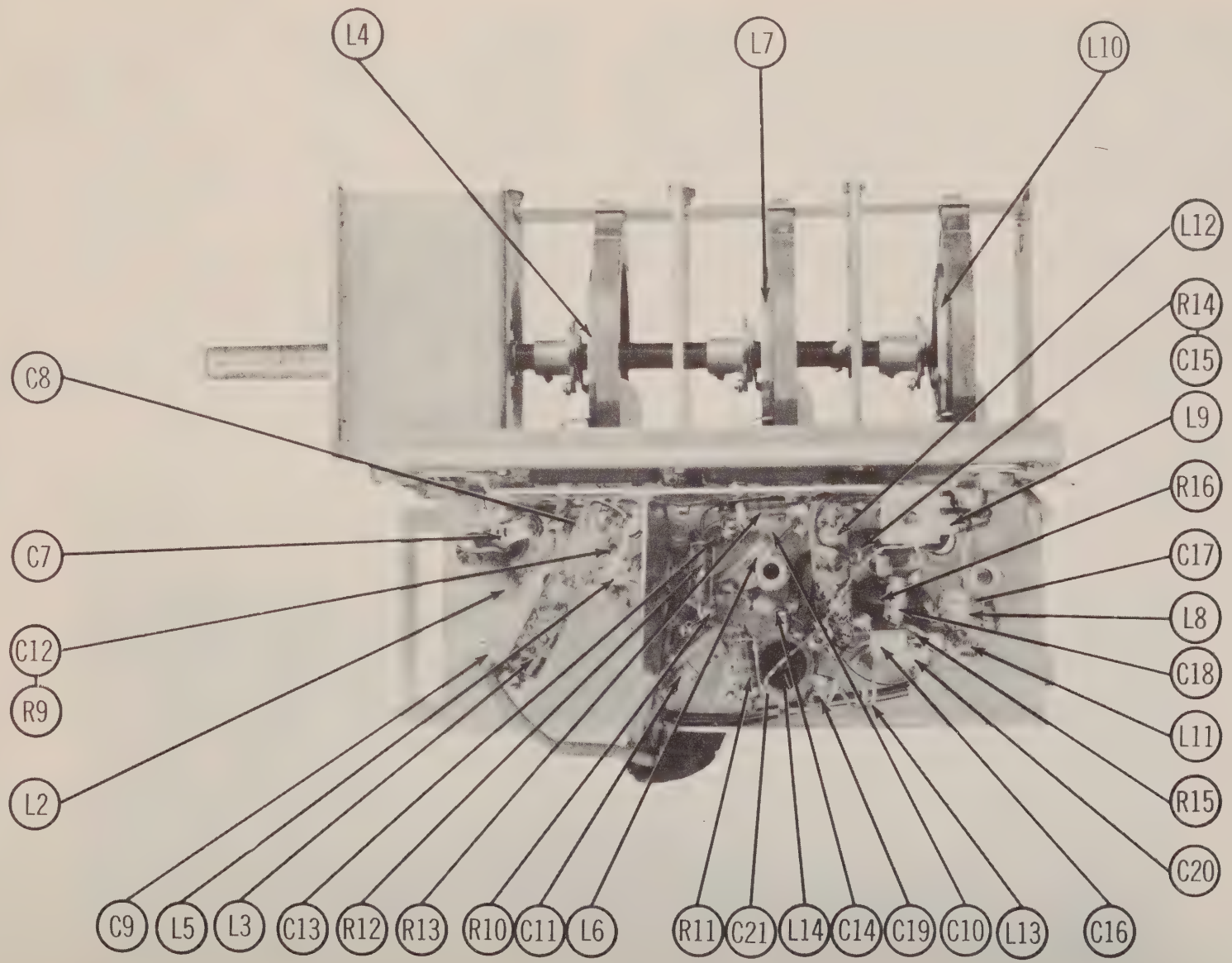
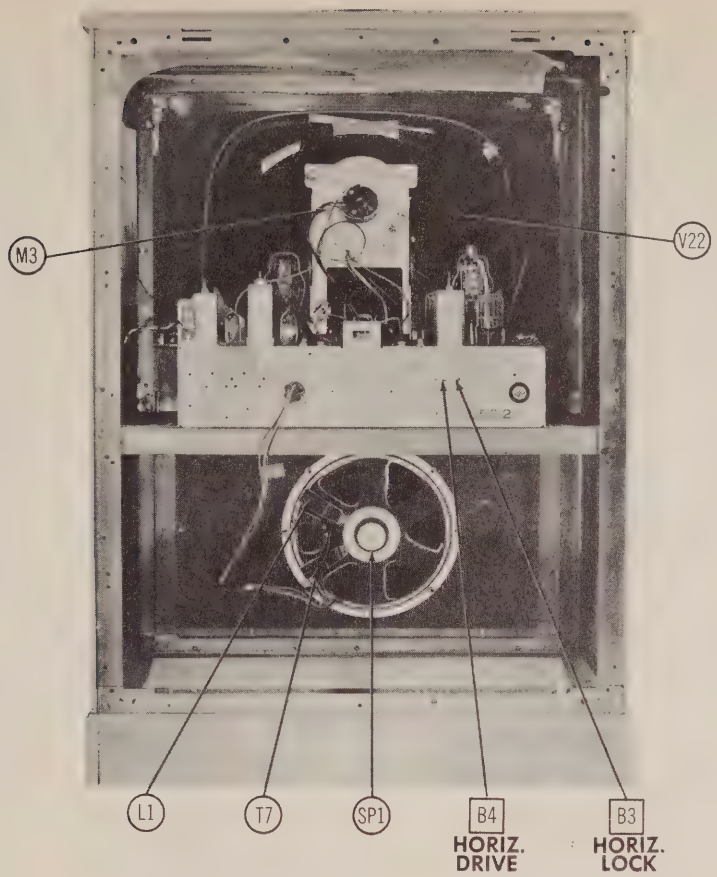


FIG. 3


L4
L7
L10
L12
R14
C15
L9
R16
C17
L8
C18
L11
R15
C20
C8
C7
C12
R9
L2
C9
L5
L3
C13
R12
R13
R10
C11
L6
R11
C21
L14
C14
C19
C10
L13
C16

RF TUNER



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ALIGNMENT

Turn the set on and tune in a television station, preferably a test pattern. Turn the horizontal hold control to the mid position of its range and adjust the horizontal frequency slug(B1)until the picture synchronizes horizontally.
Connect the vertical amplifier input of an oscilloscope in series with a 10 MMF Capacitor to terminal 5 of the horizontal oscillator coil L29. Connect the low side to chassis. Adjust the horizontal waveform slug(B2) for equal peaks in the waveform as shown in Fig. 4. If necessary, while adjusting B2, adjust B1 to keep the picture in synchronization.
Turn the horizontal hold control fully clockwise.
Adjust B1 by turning counter clockwise until the picture is just out of sync., then turn clockwise slowly until the picture is just ready to fall into sync. as indicated by a single vertical or diagonal black bar.
Turn the horizontal hold control fully counter clockwise. The picture should normally be in sync. Remove the signal by tuning off the station, then return to the signal. If more than 7 bars are present adjust the horizontal lock trimmer(B3) slightly counter clockwise until 5 to 7 bars appear before the picture falls into sync. If less than 5 bars are present adjust B3 in clockwise direction. Adjustment of B3 may necessitate readjustment of B1. Repeat adjustment of B3 until above desired conditions are obtained.
Check the pull in range of the horizontal hold control which should fall between 120 deg. and 220 deg.

HORIZONTAL DRIVE, WIDTH AND LINEARITY ADJUSTMENTS

Adjust the horizontal drive trimmer(B4)in a counter-clockwise direction until the picture starts to compress in the center or until the picture width starts to decrease, whichever condition occurs first. Then turn B4 clockwise until the compression just disappears or until picture width reaches a maximum. Turn the contrast control while watching for change in linearity at the center of the picture. If a change appears, turn B4 slightly clockwise and repeat the check. In the event that it is necessary to change the horizontal output tube, adjustment of B4 should be checked.
Turn the horizontal linearity slug,(B5), all the way out and adjust inward for best linearity.
Adjust the horizontal width slug, (B6) until the picture is slightly wider than enough to fill the picture mask. Since both width and horizontal linearity are affected by adjustment of the horizontal drive trimmer it may be necessary to adjust them alternately for optimum results.

AGC ADJUSTMENT

Tune in a station with a weak signal. Set the contrast control at its maximum clockwise position.
Adjust the AGC threshold control to the point where the receiver begins to overload.

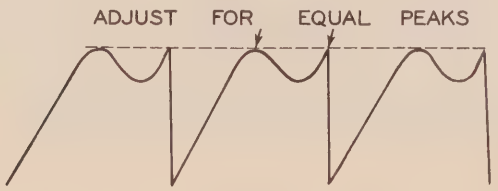


FIG. 4

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
R2A	Converter	12AV7	12AV7	9A	
B	Converter	12AT7	12AT7	9A	
V3	1st. Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	4th Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Detector - Noise Limiter	6AL5	6AL5	6BT	
V8	Video Output	6CB6	6CB6	7CM	
V9	DC Restorer	6C4	6BG	8BG	
V10	Keyed AGC	6AU6	6AU6	7BK	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier - AGC Delay	6AV8	6AV8	7BT	
V14	Audio Output	6W6GT	6W6GT	7AC	
V15	Sync. Clipper - Sync. Amplifier	6SL7GT	6SL7GT	8BD	
V16	Vert. Oscillator - Vert. Output	6BL7GT	6BL7GT	8BD	
V17	Horiz. Oscillator Horiz. AFC	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6CD6G	6CD6G	5BT	
V19	Damper	6W4GT	5W4GT	4CG	
V20	HV Rectifier	1B3GT	1B3GT	3C	
V21	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V22A	17CP4	17CP4		12D	
B	17BP4A	17BP4A		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	B-151693	AFH2-72		UP4450		TVL-2830	▲ Filter
B	40	475							▲ Filter
C2	500	10	B-149038	PRS12/500		BRH125A		TVA-1132	Bias Filter (Red)
C3A	40	475	B-151695	AFB3-192		UPT303		TVL-3764	▲ Decoupling
B	40	250							■ Decoupling
C	100	50							▲ Vert. Output Cathode
C4	40	300	B-151558	PRS450/40		BR4035		TVA-1611	Audio Output Dec.
C5A	10	475	B-151694	AFB3-50		UPT432		TVL-4840	▲ Vert. Output Dec.
B	4	350							■ Video Output Screen
C	40	300							▲ Decoupling
C6	10	25	B-149211	PRS25/10		BR102A		TVA-1204	Stabilizing Cap.
C7	27		C-137727-49				N080-331-270		RF Coupling
C8	27		C-137727-49				N080-331-270		Fixed Trimmer
C9	1500		C-137727-113	SI1500	D6-152	TM5D15	GP2L-152	5HK-D15	AGC Filter
C10	5000		C-137727-48	SI5000	D6-502	TM5D5	GP2-333-502	5HK-D5	RF Amp. Plate Dec.
C11	1500		C-137727-113	SI1500	D6-152	TM5D15	GP2L-152	5HK-D15	RF Amp. Screen Bypass
C12	5		W-137398-6	SI5NP0	TCZ-4.7		NP0K-050		RF Amp. Cathode
C13	1500		C-137727-113	SI1500	D6-152	TM5D15	GP2L-152	5HK-D15	RF Amp. Fil. Bypass
C14	6		C-137727-106				N330K-060		RF Coupling
C15	3.3		W-137395-5	3.3NP0	TCZ-3.3		NP0K-3R3		Fixed Trimmer
C16	1		W-137398-2		TCZ-1		NP0K-010		Osc. Coupling
C17	6		C-137727-106				N330K-060		Osc. Grid Cap.
C18	6		C-137727-106				N330K-060		Fixed Trimmer
C19	10		C-137727-44	SI10N080			N080-331-100		Fixed Trimmer
C20	1500		C-137727-113	SI1500	D6-152	TM5D15	GP2L-152	5HK-D15	Mixer Cathode Bypass
C21	1500		C-137727-113	SI1500	D6-152	TM5D15	GP2L-152	5HK-D15	Mixer Plate Dec.
C22A	4000		C-144675-6	BPD-2X004	D6-402	TM5DD4	822-004	5HK-2D4	AGC Filter
B	4000				D6-402				RF Bypass
C23	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Video IF Dec.
C24	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AGC Filter
C25	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Video IF Dec.
C26	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Video IF Fil.
C27A	4000		C-144675-6	BPD-2X004	D6-402	TM5DD5	822-004	5HK-2D4	3rd. Video IF Dec.
B	4000				D6-402				3rd. Video IF Cathode
C28	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	4th. Video IF Dec.
C29	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	4th. Video IF Fil.
C30	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass
C31	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Bias Filter
C32	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Video Det. Fil.
C33	5		C-137727-103	SI5NP0	TCZ-4.7		NP0K-050		Video Det. Filter
C34	.08	400	39001-85						Video Coupling
C35	.05	400	39001-17	P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C36	5000		C-144-675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass
C37	.1	200	39001-19	P288-1	DF-104	PJ2P1		2TM-P1	AGC Filter
C38	.05	400	39001-17	P488-05	DF-503	PTE4S5		4TM-S5	AGC Filter
C39	.02	400	39001-80	P488-02	DF-203	PTE4S2		4TM-S2	Sound IF Dec.
C40	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Sound IF Cathode
C41	5000		C-144675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Diode Load Cap.
C42	1000		C-137727-110	SI1000	D6-102	TM5D1	GP2L-102	5HK-D1	RF Bypass
C43	.005	600	39001-11	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	De-Emphasis
C44	.01	600	39001-13	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C45	.01	400	39001-13	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C46	.01	400	39001-13	P488-01	D6-103	P TE4S1	GP2-333-103	4TM-S1	Audio Coupling
C47	.00025	600	39001-73	1468-00025	D6-251	PTE6T25	GP2K-251	6TM-T25	AF Amp. Plate Bypass
C48	.05	400	39001-17	P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C49	.01	400	39001-13	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Output Plate
C50	.01	400	39477-41	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Sync. Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C51	.001	600	39478-35	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Sync. Coupling
C52A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		♦W-149878	P688-005	♦PC-100	PTE6D5	GP2-333-502	♦101C1	Vert. Integrator Net.
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C53	.0047	600	39478-39	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	Vert. Osc. Grid Cap.
C54	.08	400	C-146434-11						Vert. Discharge
C55	.1	400	39001-19	P488-1	DF-104	PTE4P1		4TM-P1	Vert. Sweep Coupling
C56	.03	600	39001-82	P688-03		PTE6S3		6TM-S3	Vert. Sweep Coupling
C57	.03	600	39001-82	P688-03		PTE6S3		6TM-S3	Vert. Sweep Coupling
C58	.08	200	39001-85						Integrator Net.
C59	180	500	B-137498-24	1469-0002		5R5T2		MS-32	Horiz. Sync. Coupling
C60	.0022	400	39477-37	P688-0022	D6-222	PTE6D22	GP2-333-222	6TM-D22	Horiz. Sync. Coupling
C61	.05	600	39001-17	P688-05	DF-503	PTE 6S5		6TM-S5	Horiz. AFC Plate
C62	.25	200	39001-87	P488-25		PJ2P25		2TM-P25	Horiz. AFC Filter
C63	.02	200	39001-80	P488-02	DF-203	PJ2S2		2TM-S2	Horiz. AFC Filter
C64	160	1000	B-137498-65						Horiz. Osc. Grid Cap.
C65	.01	400	C-148813-2	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Fixed Trimmer
C66	1300	500	B-137498-53						Horiz. Discharge
C67	.5	600	B-148317-5	684-5		PTE6P5			RF Bypass
C68	820	500	B-137498-56						Horiz. Sweep Coupling
C69	0.5	400	39001-17	P488-05	DF-503	PTE4S5		4TM-S5	Horiz. Output Screen
C70	.2	200	B-149488-2	P488-22		PTE4P22		2TM-P22	Horiz. Sweep Coupling
C71	.1	400	C-146434-2	P488-1		PTE4P1		4TM-P1	Damper Filter
C72	.15	400	C-146434-10	P 488-15		PTE4P15		4TM-P15	Damper Filter
C73	500	20000	A-151109	HV20C	TV3-502	MM-C20T5			HV Filter
C74	500	20000	A-151109	HV20C	TV3-502	MM-C20T5			HV Filter ♦
C75	.0068	1000	39478-118	P1088-0068				MB-D68	Fixed Trimmer
C76	5000		C-144-675-2	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Noise Limiter Cathode

* Not used in all models

♦ Items C52A, C52B, C52C, R79A, R79B, R79C are combined in one unit

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1.5Meg	½	B-148852	Q11-138	AG-83-S	AN-75	Vert. Hold Control
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Attach to R1A per instructions
R2A	50KΩ	½	B-148953	Q11-123	AG-44-S	AN-31	Horiz. Hold Control
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Attach to R2A per instructions
R3A	40KΩ	½	B-148966	Q11-123	AG-43-S	AN-31	Brightness Control
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Attach to R3A per instructions
R4	1500Ω	4	B-149893		RTV-205		Focus Control - Wire Wound
R5	1000Ω	1	W-148861				AGC Control - Wire Wound
				Concentrikit			
R6A	1500Ω	½	C-151111	B17-110 *		SBBT-803-S	Contrast Control - Panel
B	1Meg	½		B13-137X *			Volume Control - Tapped ⑤250KΩ - Rear
C	Shaft end		Not Req.	E187 *			Attach per instructions in Concentrikit
D	Switch		Not Req.	76-1 *			Attach per instructions in Concentrikit
R7A	1.5Meg	½	B-152129	Q11-138	AG-83-S	AN-75	Height Control
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Attach to R7A per instructions
R8A	3000Ω	½	B-151634	Q11-112	AM-15-S		Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	RS-2		Attach to R8A per instructions

* Additional parts to be used with Concentrikit

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R9	82Ω	½	39374-12	BTS-82	RF Amp. Cathode
R10	15KΩ	½	39374-30		RF Amp. Screen
R11	56000Ω	½	39374-34		RF Coil Shunt
R12	560Ω	½	39374-22	BTS-560	Decoupling
R13	5600Ω	½	39374-34		Decoupling
R14	4700Ω	½	39374-33	BTS-4700	Mixer Grid
R15	1200Ω	½	39374-39	BTS-1200	Mixer Cathode
R16	15KΩ	½	39374-34		Osc. Grid
R17	560Ω	½	39374-22	BTS-560	Mixer Coil Shunt
R18	100Ω	20% ½	39373-14	BTS-100	Decoupling
R19	15KΩ	5% ½	39375-77		1st. Video IF Amp. Grid
R20	68Ω	½	39374-11		1st. Video IF Amp. Cathode
R21	100Ω	20% ½	39373-14	BTS-100	Decoupling
R22	100Ω	20% ½	39373-14	BTS-100	Decoupling
R23	100Ω	1	39374-101	BTA-100	Voltage Divider
R24	10KΩ	20% ½	39373-54	BTS-10K	AGC Network
R25	1000Ω	20% ½	39373-33	BTS-1000	AGC Network
R26	8200Ω	5% ½	39375-75		2nd. Video IF Coil Shunt
R27	68Ω	½	39374-17		2nd. Video IF Amp. Cathode
R28	100Ω	20% ½	39373-14	BTS-100	Decoupling
R29	10KΩ	5% ½	39375-73		3rd. Video IF Coil Shunt
R30	100Ω	½	39374-13	BTS-100	3rd. Video IF Amp. Cathode
R31	100Ω	20% ½	39373-14	BTS-100	Decoupling
R32	6800Ω	5% ½	39375-69		4th. Video IF Coil Shunt
R33	150Ω	½	39374-15	BTS-150	4th. Video IF Amp. Cathode
R34	12KΩ	5% ½	39375-75		5th. Video IF Coil Shunt
R35	680KΩ	5% ½	39375-117	BTS-680K 5%	AGC Network
R36	100KΩ	5% ½	39375-97	BTS-100K 5%	AGC Network
R37	10KΩ	5% ½	39375-73	BTS-10K	AGC Network
R38	100Ω	20% ½	39373-14	BTS-100	Bias Network
R39	4700Ω	5% ½	39375-65	BTS-4700 5%	Video Det. Diode Load
R40	100KΩ	½	39374-49	BTS-100K	AGC Network
R41	47Ω	2			Video Output Cathode
R42	82KΩ	2	39374-224	BTB-82K	Video Output Screen
R43	3900Ω	5% 1	39375-211	BTA-3900 5%	Video Output Plate
R44	6800Ω	5% 2	39375-365	BTB-6800 5%	Video Output Plate
R45	4700Ω	½	39374-37	BTS-4700	Isolation
R46	10KΩ	5% 1	39375-221	BTA-10K 5%	Voltage Divider
R47	1Meg	½	39374-61	BTS-1Meg	Voltage Divider
R48	1.5Meg	5% ½	39375-125	BTS-1.5Meg 5%	AGC Network
R49	100KΩ	½	39374-49	BTS-100K	Picture Tube Grid
R50	47KΩ	½	39374-45	BTS-47K	Picture Tube Cathode
R51	220KΩ	½	39374-53	BTS-220K	DC Restorer Load

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R52	150KΩ	½	39374-51	BTS-150K	DC Restorer Load
R53	47KΩ	½	39374-45	BTS-47K	DC Restorer Load
R54	39KΩ	1	39374-220	BTA-39K	Voltage Divider
R55	47KΩ	1	39374-221	BTA-47K	Voltage Divider
R56	3200Ω	½	39374-29	BTS-3200	Voltage Divider
R57	6800Ω	1	39374-123	BTA-6800	Brightness Control Shunt
R58	27KΩ	½	39374-42	BTS-27K	Vert. Blanking Network
R59	220Ω	½	39374-17	BTS-220	Sound IF Amp. Cathode
R60	27KΩ	1	39374-128	BTA-27K	Sound IF Amp. Decoupling
R61	22Ω	½	39374-5		Balancing
R62	27KΩ	½	39374-42	BTS-27K	De-emphasis
R63	18KΩ	½	39374-40	BTS-18K	Ratio Det. Diode Load
R64	47KΩ	½	39374-45	BTS-47K	Tone Compensation
R65	3.9Meg	½	39374-75	BTS-3.9Meg	AF Amp. Grid
R66	100KΩ	½	39374-49	BTS-100K	AF Amp. Plate
R67	100KΩ	5% ½	39375-97	BTS-100K 5%	Voltage Divider
R68	1Meg	5% ½	39375-121	BTS-1Meg 5%	Output Grid
R69	390Ω	1	39374-196	BTA-390	Output Cathode
R70	4700Ω	½	39374-33	BTS-4700	Output Screen
R71	100Ω	20% ½	39373-14	BTS-100	Decoupling
R72	1Meg	½	39374-61	BTS-1Meg	Sync. Amp. Grid
R73	56KΩ	½	39374-134	BTA-56K	Sync. Amp. Plate
R74	3.3Meg	20% ½	39373-100	BTS-3.3Meg	Sync. Clipper Grid
R75	27KΩ	1	39374-130	BTA-27K	Sync. Clipper Plate
R76	2200Ω	½	39374-29	BTS-2200	Sync. Clipper Cathode
R77	4700Ω	½	39374-33	BTS-4700	Sync. Clipper Cathode
R78	18KΩ	½	39374-40	BTS-18K	Integrator Network
R79A	22KΩ	½		BTS-22K	Integrator Network
B	8200Ω	½	♦ W149878	BTS-8200	Integrator Network
C	8200Ω	½		BTS-8200	Integrator Network
R80	1.2Meg	½	39374-63	BTS-1.2Meg	Vert. Osc. Grid
R81	27KΩ	½	39374-42	BTS-27K	Vert. Osc. Transformer Shunt
R82	820KΩ	½	39374-60	BTS-820K	Vert. Osc. Plate
R83	5600Ω	½	39374-34	BTS-5600	Vert. Peaking
R84	8200Ω	5	B-138201-10	1 3/4A-8000	Filter
R85	1Meg	½	39374-61	BTS-1Meg	Vert. Output Grid
R86	820Ω	1	39374-112	BTA-820	Vert. Output Cathode
R87	68KΩ	½	39374-47	BTS-68K	Voltage Divider
R88	820KΩ	½	39374-60	BTS-820K	Horiz. AFC Grid
R89	100KΩ	1	39374-137	BTA-100K	Horiz. AFC Plate
R90	8200Ω	½	39374-36	BTS-8200	Horiz. AFC Filter
R91	150KΩ	½	39374-51	BTS-150K	Horiz. AFC Cathode
R92	150KΩ	½	39374-51	BTS-150K	Horiz. AFC Cathode
R93	150KΩ	½	39374-51	BTS-150K	Horiz. Feedback
R94	2.7Meg	½	39374-71	BTS-2.7Meg	Voltage Divider
R95	100KΩ	5% ½	39375-97	BTS-100K 5%	Horiz. Osc. Grid
R96	10KΩ	½	39374-37	BTS-10K	Horiz. Osc. Transformer Shunt
R97	22KΩ	½	39374-41	BTS-22K	Horiz. Osc. Transformer Shunt
R98	47KΩ	1	39374-133	BTA-47K	Horiz. Osc. Plate
R99	1000Ω	1	39374-113	BTA-1000	Decoupling
R100	100Ω	20% ½	39373-14		Parasitic Suppressor
R101	1Meg	20% ½	39373-82	BTS-1Meg	Horiz. Output Grid
R102	18KΩ	2	39374-216	BTB-18K	Horiz. Output Screen
R103	18KΩ	2	39374-216	BTB-18K	Horiz. Output Screen
R104	100Ω	20% ½	39373-14		Parasitic Suppressor
R105	15KΩ	2	39374-215	BTB-15K	Current Limiting
R106	1Meg	20% 1	39373-202		HV Filter
R107	200Ω	7	W-148554-3	1 3/4A-200	Focus Coil Shunt - Wire Wound
R108	27Ω	2	39374-182		Bias Network

♦ Items R79A, R79B, R79C, C52A, C52B, C52C are combined in one unit

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ①1.9A	700VCT .220ADC	5VAC ②3A	6.3VAC ③9.4A SEC. 4 6.3VAC ⑤2.4A	C-151612	P-8169	P-3059	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	190Ω	720Ω	B-146842-4	A-8111 ①	A-3000 ①	TB0-3 ②	Vert. Oscillator Trans.
T3	35Ω	200Ω SEC. 2 7Ω Tapped ⑤5Ω SEC. 3 1.1Ω SEC. 4 0Ω	AD-151802		HV0-7 MWC-1 ③		Horiz. Output Trans.
T4	800Ω Tapped ③14Ω		B-148970	A-8123	A-3037	TS0-5 ①	Vert. Output Trans.
T5A	14Ω		AC-148887-6	DY-8	MDF-70		Hor. Deflection Coils
B	68Ω						Vert. Deflection Coils
T6	300Ω Tapped ③180Ω & 245Ω		AB-151759				Focus Coil

① Drill One New Mounting Hole
② Mount on Top of Chassis
③ Replace width coil with MWC-1

PARTS LIST CONTINUED ON PAGE 15

RESISTANCE MEASUREMENTS

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	550KΩ	82Ω	0Ω	.1Ω	■760Ω	■16KΩ	0Ω		
V 2	12AV7	■5.8KΩ	4.7KΩ	1.2KΩ	0Ω	0Ω	■5.8KΩ	15KΩ	0Ω	.1Ω
V 3	6AU6	20KΩ	0Ω	.1Ω	0Ω	■200Ω	■200Ω	68Ω		
V 4	6AU6	10KΩ	0Ω	.1Ω	0Ω	■300Ω	■300Ω	68Ω		
V 5	6AU6	.5Ω	0Ω	.1Ω	0Ω	■400Ω	■400Ω	100Ω		
V 6	6CB6	.6Ω	150Ω	0Ω	.1Ω	■500Ω	■500Ω	0Ω		
V 7	6AL5	400Ω	127Ω	.1Ω	0Ω	4.7KΩ	0Ω	4.7KΩ		
V 8	6CB6	4.7KΩ	200Ω	.1Ω	0Ω	†11KΩ	†82KΩ	200Ω		
V 9	6C4	47KΩ	INF	.1Ω	0Ω	47KΩ	0Ω	370KΩ		
V 10	6AU6	105KΩ	0Ω	.1Ω	0Ω	110KΩ	■0Ω	400Ω		
V 11	6AU6	2.2Ω	0Ω	.1Ω	0Ω	■27KΩ	■27KΩ	220Ω		
V 12	6AL5	INF	INF	.1Ω	0Ω	0Ω	0Ω	18KΩ		
V 13	6AV6	4.7Meg	0Ω	.1Ω	0Ω	550KΩ	550KΩ	†100KΩ		
V 14	6W6GT	INF	■.1Ω	†400Ω	†5.1KΩ	■100KΩ	INF	■0Ω	■390Ω	
V 15	6SL7GT	1Meg	†20KΩ	0Ω	3.3Meg	†300Ω	6.9KΩ	.1Ω	0Ω	
V 16	6BL7GT	1.9Meg	#830KΩ	0Ω	1.5Meg	#9KΩ	1.1KΩ	.1Ω	0Ω	
V 17	6SN7GT	250KΩ	#48KΩ	0Ω	900KΩ	90KΩ	300KΩ	0Ω	.1Ω	
V 18	6CD6G	INF	.1Ω	0Ω	1Meg	1Meg	†9KΩ	0Ω	†9KΩ	TOP CAP #44Ω
V 19	6W4GT	INF	INF	110KΩ	INF	†300Ω	INF	■0Ω	■.1Ω	
V 20	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #15KΩ
V 21	5U4G	INF	18KΩ	.1Ω	51Ω	■0Ω	50Ω	■0Ω	18KΩ	
V 22	17CP4	0Ω	250KΩ	PIN 10 †65Ω	PIN 11 53KΩ	PIN 12 .1Ω				

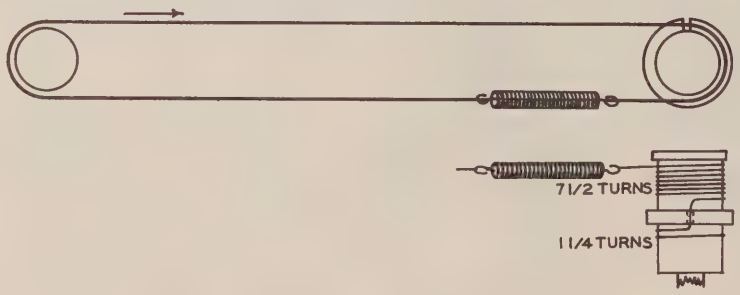
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V21
■ MEASURED FROM 120VDC LINE

DISASSEMBLY INSTRUCTIONS

1. Remove 3 push on Type Control Knobs from front Panel.
2. Remove 6 metal screws holding rear cover. Remove rear cover.
3. Disconnect built in Antenna and speaker plug.
4. Remove 4 Speaker nuts holding speaker. Remove Speaker.
5. Remove 4 Chassis Bolts. Remove Chassis.

Note. For picture tube removal it is necessary to remove chassis as outlined above.

TUNING CONTROL FULLY CLOCKWISE



DIAL CORD STRINGING

L. F. CLAN
3924 MEADE
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T7	2.2KΩ	3.5Ω	250Ω	.7Ω	B-152029 B-151762 ④	A-3876	A-2928	RO-2	④Alternate Transformer

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	CROSLEY PART No.	VIKING PART No.	QUAM PART No.	
SP1A	P.M.	3.5Ω	C-152043-1 138762-5 ⑤ AD-152023-1⑤	10J12	10A4A	⑤ Alternate Speaker
	CONE DIA.	V. C. DIA.	AD-152031 ⑤			
SP1B	10"	3/4"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.220ADC	65Ω	1.4Henries	B-15042	C-2327	C-2974		

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	CROSLEY PART No.	MERIT PART No.	IRC PART No.	
L2	Ant. Shunt Coil	.59Ω		B-148936-2		CLA	.82 Microhenry
L3	RF Choke	6.1Ω		B-148936-3		CL-1	8.2 Microhenries
L4	Ant. Coil	0Ω		D-151347			
L5	Ant. End Coil	0Ω		AW-149071			
L6	RF End Ind.	0Ω		AW-149070			
L7	RF Coil	0Ω		D-151347			
L8	Osc. End Ind.	0Ω		AW-149069			
L9	Osc. Shunt Coil	0Ω		AW-149062			
L10	Osc. Coil	0Ω		D-151347			
L11	RF Choke	0Ω		AW-149086			
L12	RF Choke	6.1Ω		B-148936-3		CL-1	8.2 Microhenries
L13	Plate Choke	0Ω		AW-149072			
L14A	Conv. Plate	.5Ω		AC-152048			
L14B	IF Coupling	.1Ω	.1Ω				Part of L14A
L15	1st. Video IF	.3Ω		AW-146763			
L16	2nd. Video IF	.6Ω	.6Ω	AC-147974			
L17	Fil. Choke	0Ω		AW-143934			
L18	3rd. Video IF	.5Ω	.5Ω	AC-152000			
L19	4th. Video IF	.6Ω	.6Ω	AW-147974			
L20	5th. Video IF	.8Ω	.8Ω	AW-148983			
L21	Peaking Coil	9Ω		AC-152006			Wound on 10KΩ Resistor
L22	Peaking Coil	19.5Ω		AC-152005			
L23	Peaking Coil	3.5Ω		AC-152641			
L24	Peaking Coil	8.8Ω		AC-152007			Wound on 4.7KΩ Resistor
L25	Peaking Coil	15Ω		AC-151999			
L26	Peaking Coil	8.3Ω		AC-152007			Wound on 4.7KΩ Resistor
L27	Sound IF	2.6Ω	2.2Ω	AC-146782			
L28	Ratio Det.	4.1Ω	.2Ω	C-150394			Tap ⓐ .5Ω
L29	Horiz. Osc.	115Ω	33Ω	AC-146698			
L30	Width Coil	3Ω		AC-151757			
L31	Horiz. Lin.	9Ω		AC-152056			

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			CROSLEY PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1/4A. 125V.	W-152419	A-151620	313.250 3AG-S/B	357001	MDL 1/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M2	RF Tuner	AA-152132	Complete
M3	Ion Trap	B-148484	
B3, B4	Trimmer	AA-152150	(Dual) Horiz. Drive 30-240MMF, Horiz. Lock 10-160MMF
	Knob	AB-151731-1	Contrast (DU-17CDM, DU-17CHM, DU-17CHN, DU-17COM, DU-17TOM)
	Knob	AB-151732-1	Tuning (DU-17CDM, DU-17CHM, DU-17CHN, DU-17COM, DU-17TOM)
	Knob	AB-151733-1	Off/On Volume (DU-17CDM, DU-17CHM, DU-17CHN, DU-17COM, DU-17TOM)
	Knob	AB-151731-2	Contrast (DU-17CHB, DU-17COB, DU-17TOB)
	Knob	AB-151732-2	Tuning (DU-17CHB, DU-17COB, DU-17TOB)
	Knob	AB-151733-2	Off/On Volume (DU-17CHB, DU-17COB, DU-17TOB)
	Knob	AB-152253-1	Contrast (DU-17TOL)
	Knob	AB-152255-1	Tuning (DU-17TOL)
	Knob	AB-152254-1	Off/On Volume (DU-17TOL)

HALLICRAFTERS MODEL 5R24

PROPERTY OF
E. F. BLANKENSHIP
3924 MIAMI ST.
DENVER, COLORADO

HALLICRAFTERS
MODEL 5R24

HALLICRAFTERS
MODEL 5R24

TRADE NAME	Hallicrafters Model 5R24
MANUFACTURER	Hallicrafters Co., 4401 W. 5th Ave., Chicago 24, Ill.
TYPE SET	Three Power Portable AM Superheterodyne Receiver
TUBES (Four)	Types 1R5 Conv., 1U4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	110-120 Volts AC/DC or 7½ Volts "A" Supply & 90 Volts "B" Supply
RATING	.15 Amp @ 117 Volts AC or 50 MA @ 7½ Volts DC & 16 MA @ 90 Volts DC
TUNING RANGE—BROADCAST	540-1650 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequencey end of dial. Use isolation transformer, if available. If not, connect a.1 MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (grid) of 1R5 (V1) Low side to B-.	455 KC (400~ Mod)	Tuning gang fully open	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.	"	"	1650 KC	"	"	A5	Adjust for maximum output
3.	"	Loop	1500 KC	Tune for max. output	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

HALLICRAFTERS
MODEL 5R24

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		Hallicrafters PART No.	STANDARD REPLACEMENT		
V1	Converter	90X1R5	1R5	7AT	
V2	IF Amplifier	90X1U4	1U4	6AR	
V3	Det. AVC-AF Amp.	90X1U5	1U5	6BW	
V4	Audio Output	90X3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	Hallicrafters PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	40	150	45-193	PRS150/40-40		EDL5315X-		TVA-2445	Filter (Red)
B	40	150		PRS15/250		20		TVA-1161	Filter (Green)
C	200	15							Filter (Yellow)
C2	.05	400	46AU503J	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C3	.2	400	46AW204J	P488-22		PTE4P22		4TM-P22	RF Amp. Fil. Bypass
C4	.05	200	46AW503J	P288-05	DF-503	PJ2S5		2TM-S5	RF Amp. Fil. Bypass
C5	.01	600	46AU103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	IF Amp. Grid Filter
C6	.05	400	46AW503J	P488-05	DF-503	PTE4S5		4TM-S5	IF Amp. Screen Bypass
C7	100	500	46X20B101M	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Diode RF Filter
C8	.002	600	46AU202J	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Audio Coupling
C9	10000		47A224	BPD-01	DD-103	TM5S1	821-01	5HK-S1	AF Amp. Screen Bypass
C10	100	500	46X20B101M	1468-0001	D6-101	5W5T1	GP1K-101	1FM-315	AF Amp. Plate Bypass
C11	.002	600	46AW202J	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Audio Coupling
C12	5000		47A168	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Audio Output Plate
C13	.05	400	46AW503J	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C14	.2	400	46AW204J	P488-22		PTE4P22		4TM-P22	Line Isolation

CONTROLS

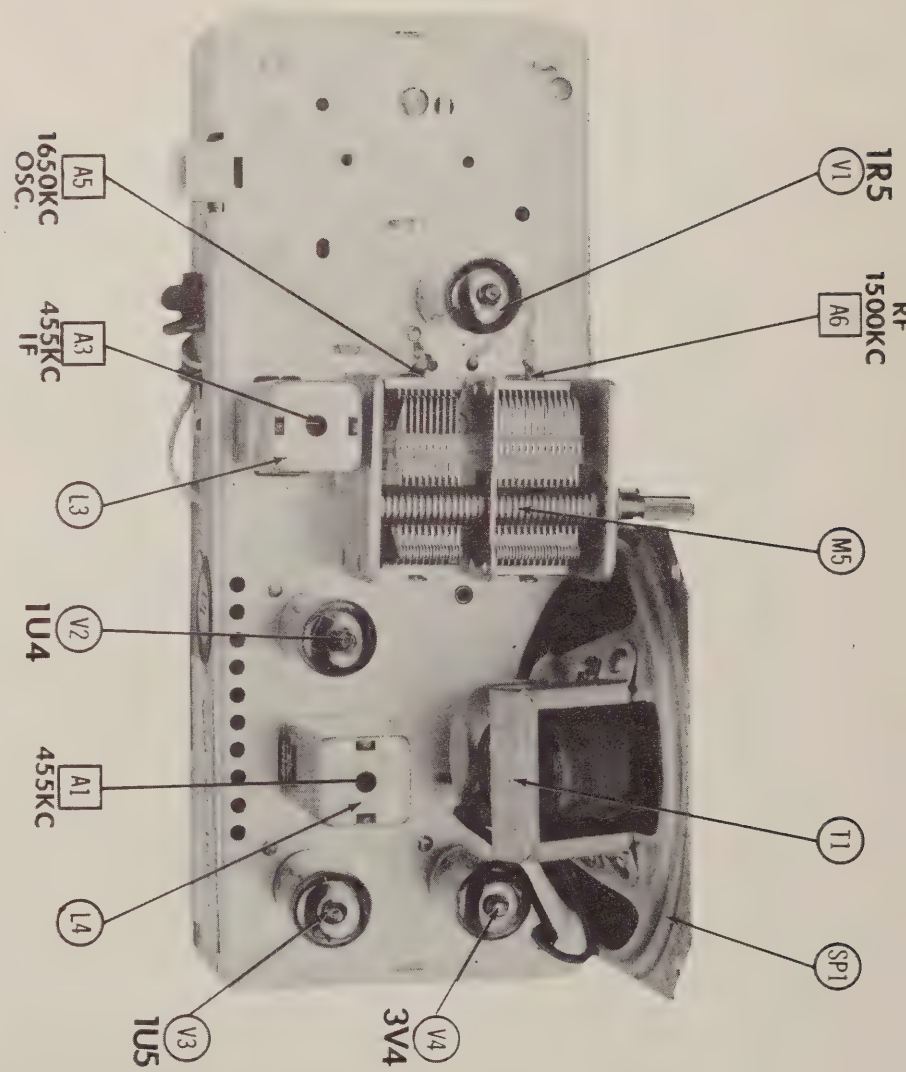
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Hallicrafters PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	50-17	Q13-137	AG-63-Z	BSK-70-S	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-2	SWB-2	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Hallicrafters PART No.	IRC PART No.	
R2	100KΩ	½	23X20X104M	BTS-100K	Osc. Grid
R3	3.3Meg	½	23X20X335M		IF Amp. Grid
R4	8200Ω	½	23X20X822M		IF Amp. Screen
R5	2.2Meg	½	23X20X225M	BTS-2.2Meg	AVC Network
R6	10Meg	½	23X20X106M	BTS-10Meg	AF Amp. Grid
R7	4.7Meg	½	23X20X475M	BTS-4.7Meg	AF Amp. Screen
R8	220KΩ	½	23X20X224M	BTS-220K	AF Amp. Plate
R9	1Meg	½	23X20X105M	BTS-1Meg	Output Grid
R10	47Ω	1	23X30X470K		Surge Limiter
R11	33KΩ	1	23X30X333M	BTA-33K	Filament Dropping
R12	2700Ω	8	24-937	1 3/4A-2500	Filament Dropping - Wire Wound - See Note
R13	2700Ω	1	23X30X272K	BTA-2700	Filter - See Note
R14	1500Ω	½	23X20X152K	BTS-1500	Filament String
R15	1000Ω	½	23X20X102K	BTS-1000	Filament String
R16	1000Ω	½	23X20X102K	BTS-1000	Filament String

Note: On some models R11 & R12 are replaced by a single 2500Ω 8 Watt resistor (Part #24-938)

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	6.2KΩ	3.2Ω	400Ω	.4Ω	Part of 85-121	A-3329		R0-11 ①	① Drill one new mtg. hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	Hallicrafters PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P M	3.2Ω	85-121		4A07	
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Hallicrafters PART No.	MERIT PART No.	
L1	Loop Ant.	2.8Ω		57-154		
L2	Osc. Coil	.8Ω	5.8Ω	51-1483		
L3	Input IF	24Ω	24Ω	50-521	BC-352	
L4	Output IF	24Ω	24Ω	50-521	BC-353	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT	Hallicrafters PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	
M1	.060ADC	27-162	NB-5	8J1	1002A	

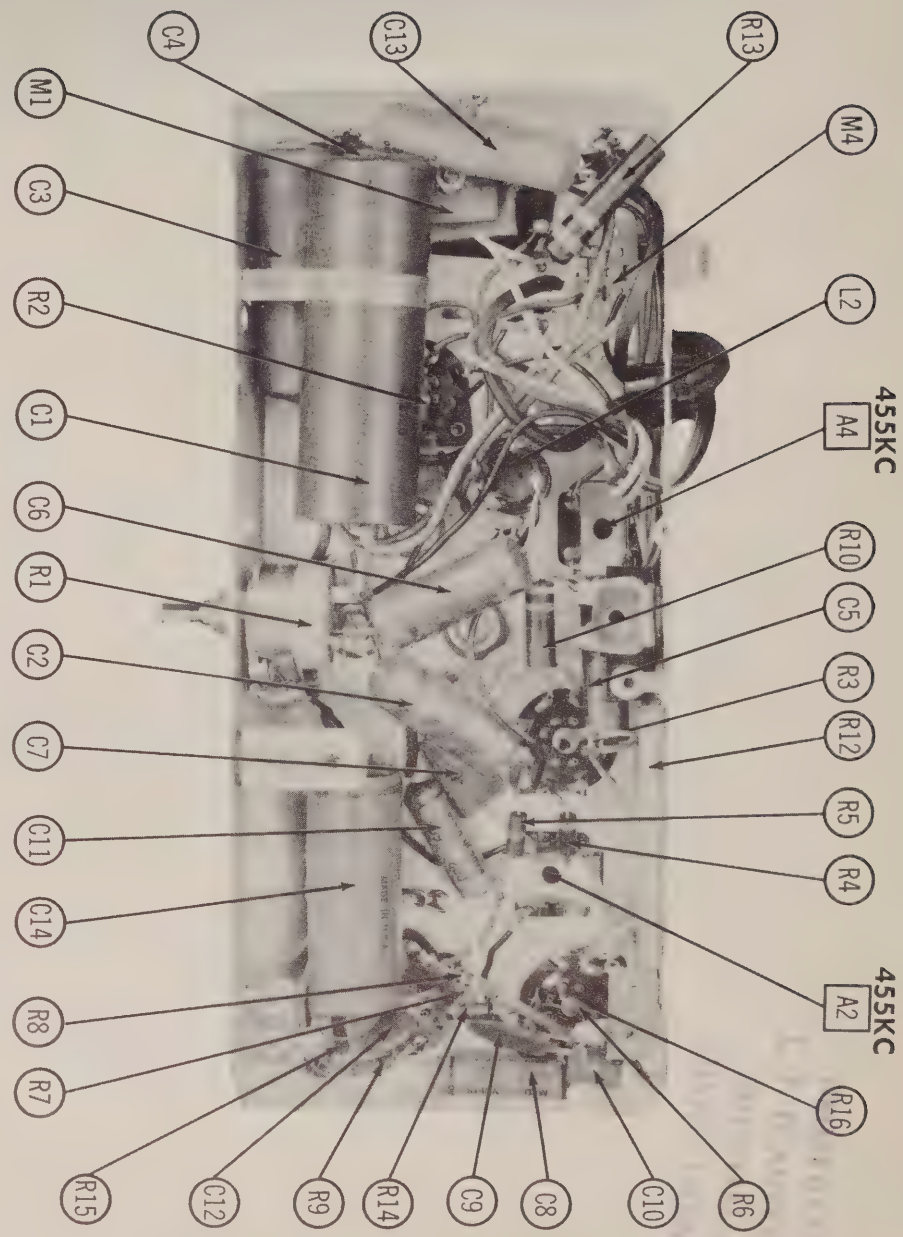
BATTERIES

ITEM No.	VOLTAGE	PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2	7.5V		717			C5			
M3	90V			490		N60	N60		

MISCELLANEOUS

ITEM No.	PART NAME	Hallicrafters PART No.	NOTES
M4	Switch	60-466	Power Change-over
M5	2 Gang Var. Cap.	48-280	(25-464MMF, 35-207MMF)
	Cabinet	78F684	
	Dial Scale	83D398	
	Knob	15C414	Station Selector
	Knob	15B413	Volume

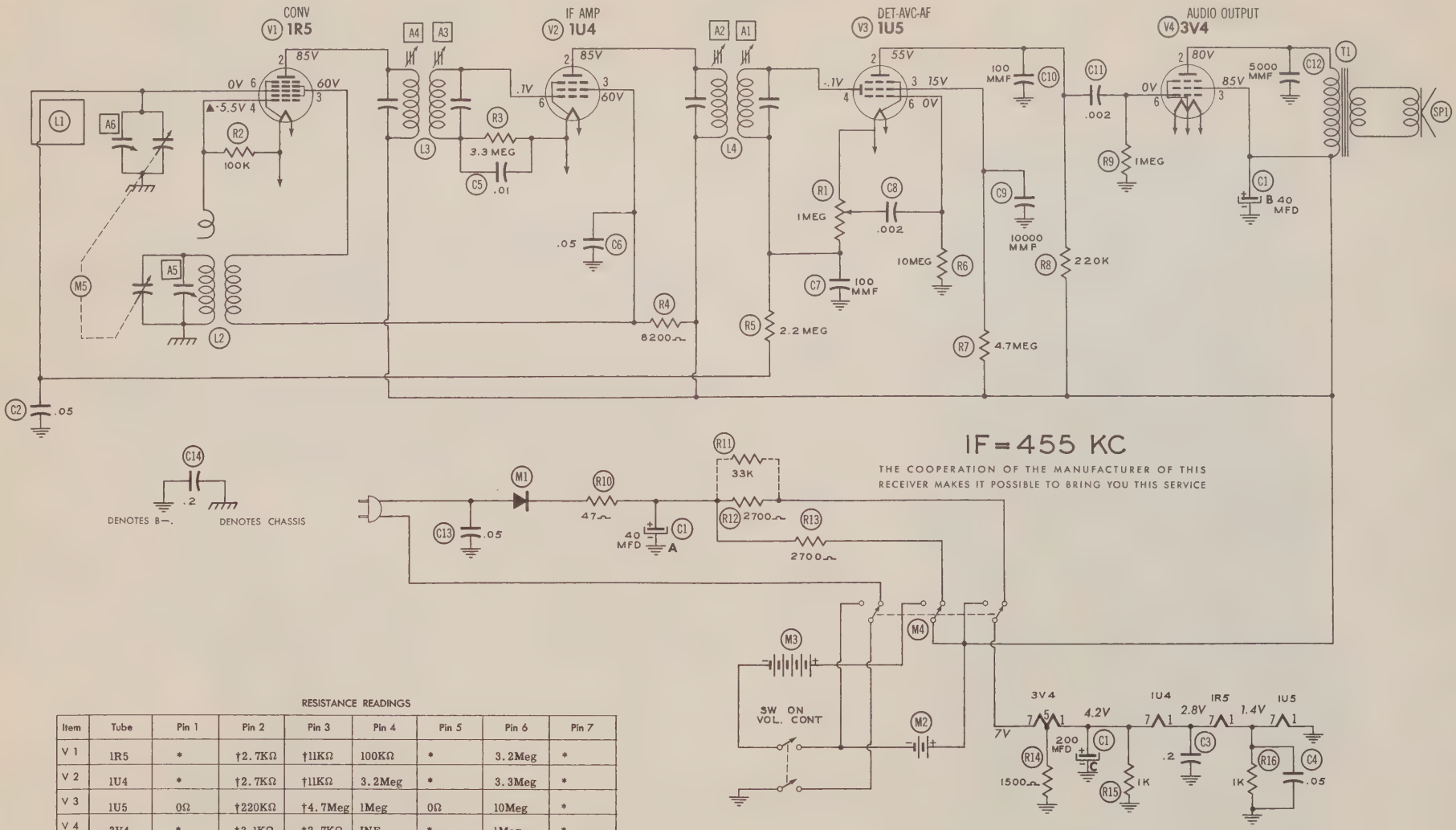
CHASSIS—BOTTOM VIEW



SET 168 FOLDER 7

HALLICRAFTERS MODEL 5R24

HALLICRAFTERS MODEL 5R24



IF = 455 KC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	*	†2.7KΩ	†11KΩ	100KΩ	*	3.2Meg	*
V 2	1U4	*	†2.7KΩ	†11KΩ	3.2Meg	*	3.3Meg	*
V 3	1U5	0Ω	†220KΩ	†4.7Meg	1Meg	0Ω	10Meg	*
V 4	3V4	*	†3.1KΩ	†2.7KΩ	INF	*	1Meg	*

ALL MEASUREMENTS TAKEN WITH M4 IN AC LINE POSITION.
† MEASURED FROM OUTPUT OF M1
▲ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1952

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL 20B501

HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

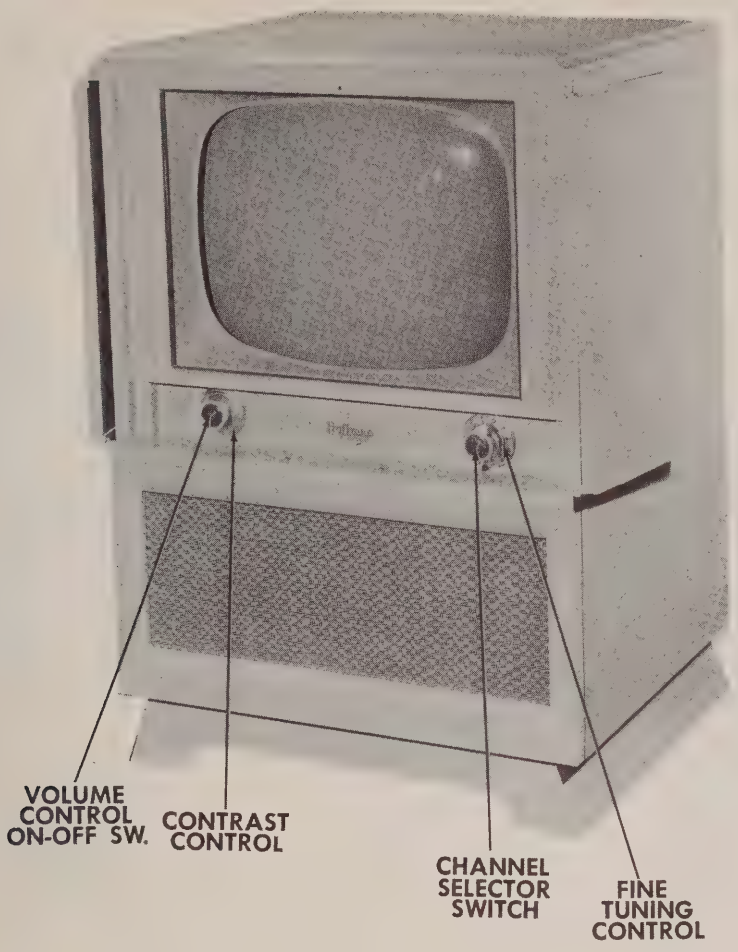
DATE 5-52 SET 168 FOLDER 8

PHOTOFACT* Folder

*TRADE MARK

HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

PROPERTY OF
L. F. TRANSENSHIP
3[illegible] ST.
DENVER, COLORADO



HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

Hoffman Model 20B501

TRADE NAME	Hoffman Models 636B, 637B, 886B, 887B (Ch. 183B, 183M), 896B, 897B, 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T)
MANUFACTURER	Hoffman Radio Corp., 3761 Hill St., Los Angeles, Calif.
TYPE SET	Television Receiver
TUBES	Twenty-Three
POWER SUPPLY	110-120 Volts AC — RATING 2.1 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

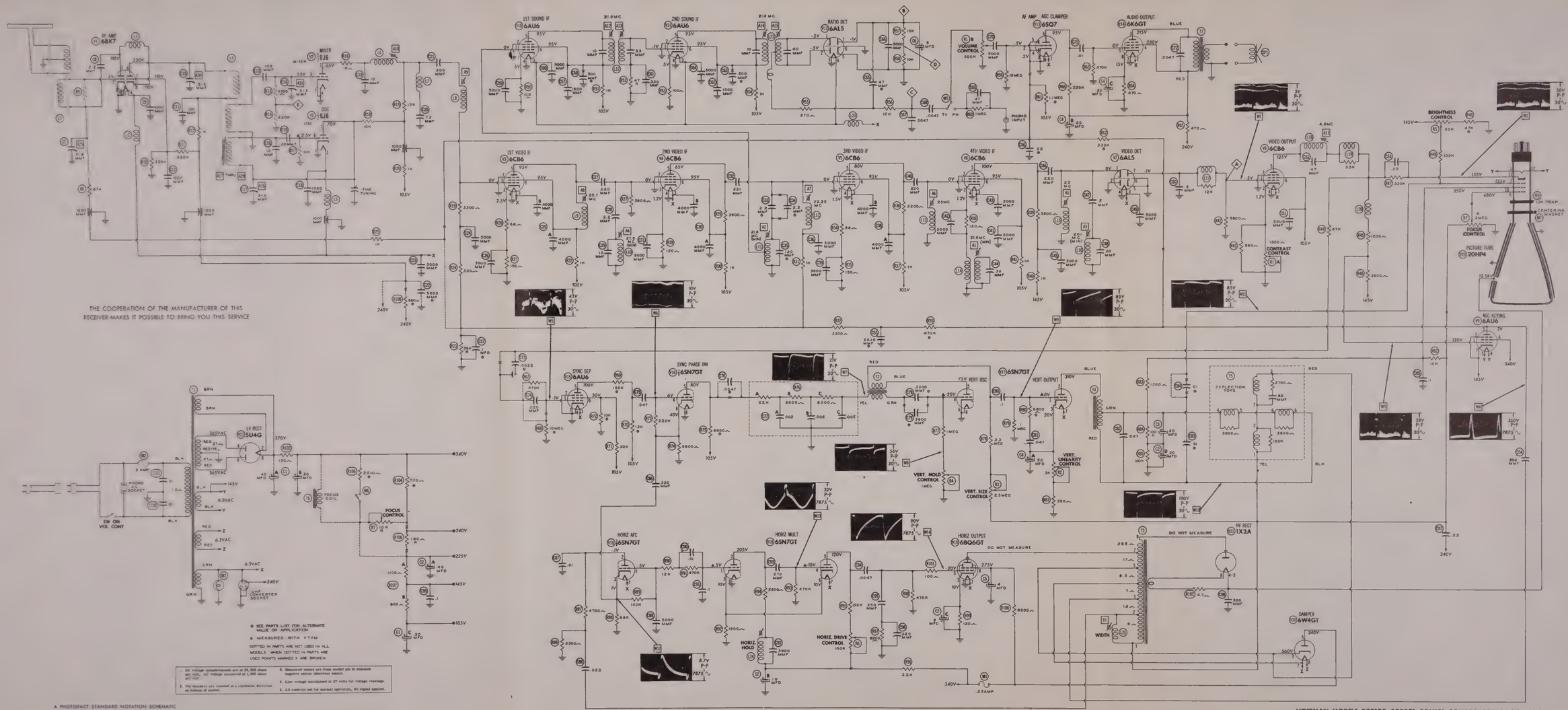
INDEX

Alignment Instructions 6, 7
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions ..... 13 thru 16
Photographs
- Cabinet - Rear View 11
- Capacitor & Alignment Identification 4, 9
- Chassis - Top View 3
- RF Tuner 10
- Resistor & Inductor Identification 12, 17

Resistance Measurements 8
Schematic (RF Tuner) 18
Schematic (T.V.) 2
Tube Placement Charts 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
RF AMP 6BK7
MIXER 6J6
OSC 6J6
1ST SOUND IF 6AU6
2ND SOUND IF 6AU6
RATIO DET 6AL5
AF AMP AGC CLAMPER 6SQ7
AUDIO OUTPUT 6K6GT
1ST VIDEO IF 6CB6
2ND VIDEO IF 6CB6
3RD VIDEO IF 6CB6
4TH VIDEO IF 6CB6
VIDEO DET 6AL5
VIDEO OUTPUT 6CB6
SYNC SEP 6AU6
SYNC PHASE INV 6SN7GT
VERT OSC 6SN7GT
VERT OUTPUT 6SN7GT
AGC KEYING 6AU6
HORIZ AFC 6SN7GT
HORIZ MULT 6SN7GT
HORIZ OUTPUT 6BQ6GT
DAMPER 6W4GT
PICTURE TUBE 20HP4
LV RECT 5U4G
HV RECT 1X2A
FOCUS CONTROL
VERT. HOLD CONTROL
VERT. SIZE CONTROL
VERT. LINEARITY CONTROL
HORIZ. HOLD
HORIZ. DRIVE CONTROL
WIDTH
CONTRAST CONTROL
BRIGHTNESS CONTROL
ION TRAP CENTERING MAGNET
DEFLECTION YOKE
VOLUME CONTROL
PHONO INPUT
SW ON VOL CONT
DO NOT MEASURE
* SEE PARTS LIST FOR ALTERNATE VALUE ON APPLICATION
& MEASURED WITH VTVM
DOTTED IN PARTS ARE NOT USED IN ALL MODELS WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
1. DC voltage measurements are at 20,000 ohms per volt, AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, No signal applied.

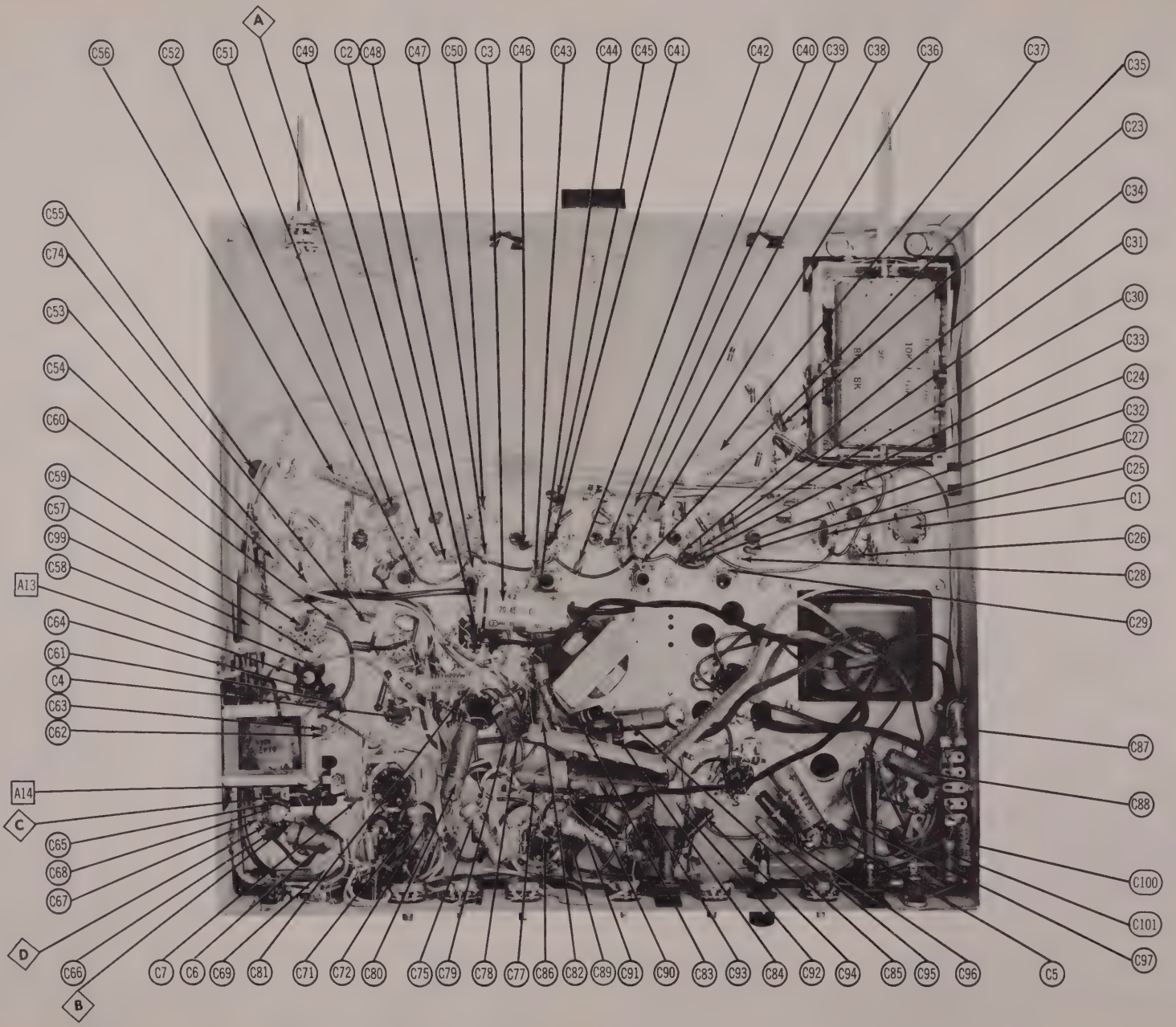
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1952

HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502 (Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF
L. F. BLA
DENVER, COLORADO

BOTTOM VIEW

TOP VIEW

TUBE PLACEMENT CHART

HOFFMAN MODELS 20B102, 20B501, 20M101, 20M500, 20P502
(Ch. 183T), 636B, 637B, 886B, 887B (Ch. 183B, M), 896B, 897B (Ch. 183T)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V18), from its socket.

VIDEO IF ALIGNMENT

Remove the Converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C37, connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	Not used	21.6MC	Any	Use VTVM.DC probe to Point (A). Common to chassis.	A1, A2	Adjust for MINIMUM deflection. Place finger on windings of A1 while adjusting A2.
2.	"	"	"	20.1MC	"	"	A3	Adjust for MINIMUM deflection.
3.	"	"	"	27.6MC	"	"	A4	Adjust for max. deflection
4.	"	"	"	23MC	"	"	A5	Adjust for max. deflection
5.	"	"	"	25MC	"	"	A6	"
6.	"	"	"	22.25MC	"	"	A7	"
7.	"	"	"	25.7MC	"	"	A8	"
8.	"	"	"	23.5MC	"	"	A9	Temporarily adjust A9 for MINIMUM deflection.
9.	"	"	"	25.5MC	"	"	A10	Adjust for max. deflection.
10.	"	"	24MC (10MC swp.)	21.6MC 26.1MC 27.6MC	"	Vert. amp. thru 10KΩ to Point (A). Low side to chassis.	A9, A10	Adjust for response curve similar to Fig. 1. If necessary retouch A4 thru A8 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.001MFD	High side to Pin 1, (grid) of 6CB6, (V8). Low side to chassis.	4.5MC (unmod.)	Any	DC probe thru detector (Fig. 2) to Pin 11, (cathode) of picture tube.	A11	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	.001MFD	High side to Pin 1, (grid) of 6AU6, (V10). Low side to chassis.	21.6MC (unmod.)	Any	DC probe to Point (B). Common to chassis.	A12, A13 A14	Adjust for maximum deflection
13.	"	"	"	"	DC probe to Point (C). Common to Point (D).	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	.001MFD	High side to Pin 1, (grid) of 6AU6, (V10). Low side to chassis.	21.6MC (450KC swp.	21.6MC	Any	Vert. amp. to Point (B). Low side to chassis.	A12, A13 A14	Disconnect stabilizor capacitor C6. Adjust for maximum amplitude & symmetry as per Fig. 3.
13.	"	"	"	"	"	"	A15	Reconnect capacitor C6. Adjust A15 so 21.6 MC occurs at center of crossover lines as per Fig. 4. SLIGHTLY retouch A14 for maximum amplitude & straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A16. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A16 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
14.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	215.75MC	13	DC probe to Point (C). Common to Point (D).	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
			209.75MC	12		A18	
			203.75MC	11		A19	
			197.75MC	10		A20	
			191.75MC	9		A21	
			185.75MC	8		A22	
			179.75MC	7		A23	
			87.75MC	6		A24	
			81.75MC	5		A25	
			71.75MC	4		A26	
			65.75MC	3		A27	
			59.75MC	2		A28	

ALIGNMENT INSTRUCTIONS (CONT.)

RF & MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC swp.)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point E Low side to chassis.	A29, A30 A31	Adjust for response curve similar to Fig. 5 with markers above 90%.
16.	"	"	213MC (10MC swp.)	211.25MC 215.75MC	13	"		Check all channels for response curve similar to Fig. 5. If markers fall below 70% on any channel make slight adjustment of A29, A30 & A31 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC swp.)	199.25MC 203.75MC	11			
			195MC (10MC swp.)	193.25MC 197.75MC	10			
			189MC (10MC swp.)	187.25MC 191.75MC	9			
			183MC (10MC swp.)	181.25MC 185.75MC	8			
			177MC (10MC swp)	175.25MC 179.75MC	7			
			85MC (10MC swp.)	83.25MC 87.75MC	6			
			79MC (10MC swp.)	77.25MC 81.75MC	5			
			69MC (10MC swp.)	67.25MC 71.75MC	4			
			63MC (10MC swp.)	61.25MC 65.75MC	3			
			57MC (10MC swp.)	55.25MC 59.75MC	2			

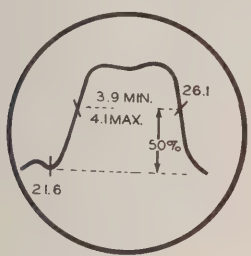


FIG. 1

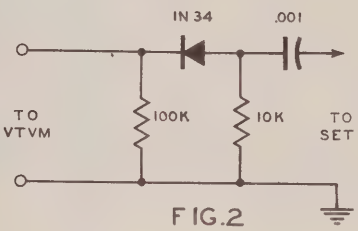


FIG. 2

FIG. 3

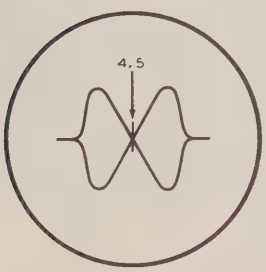


FIG. 4

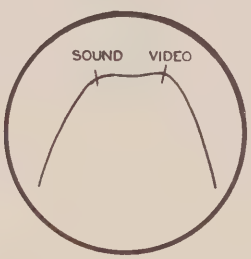
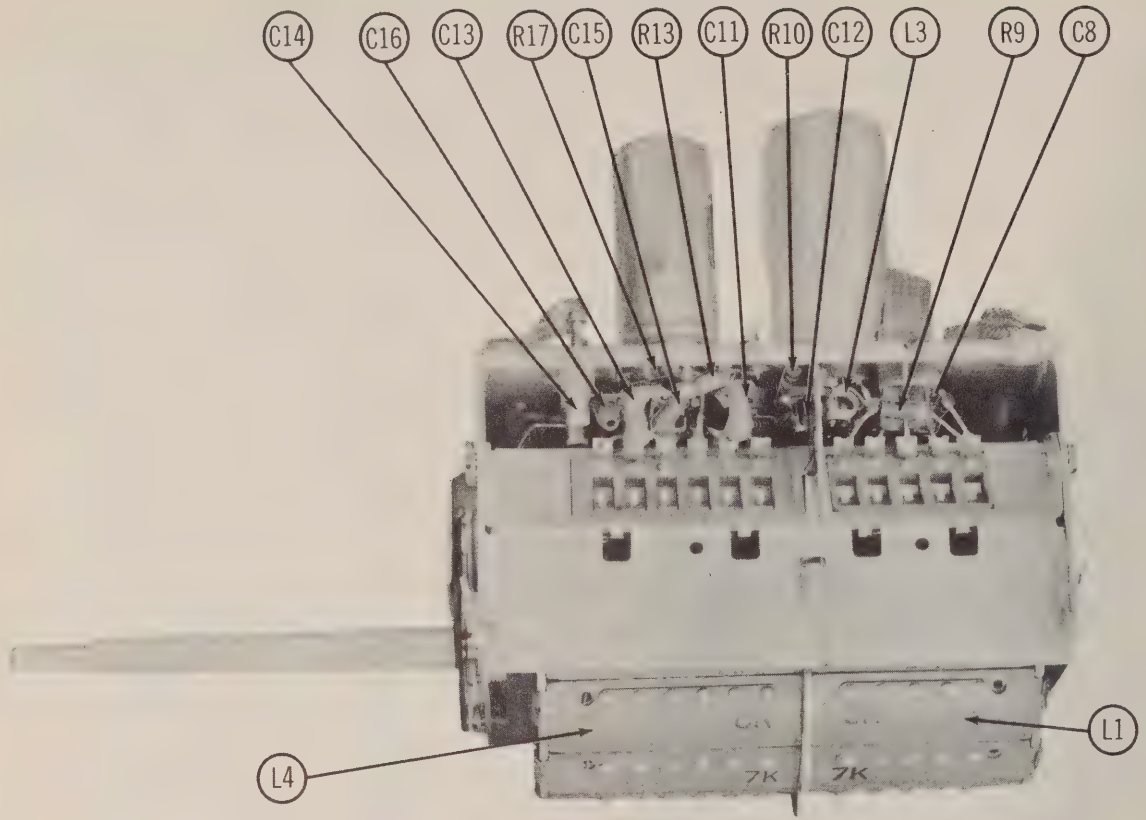


FIG. 5

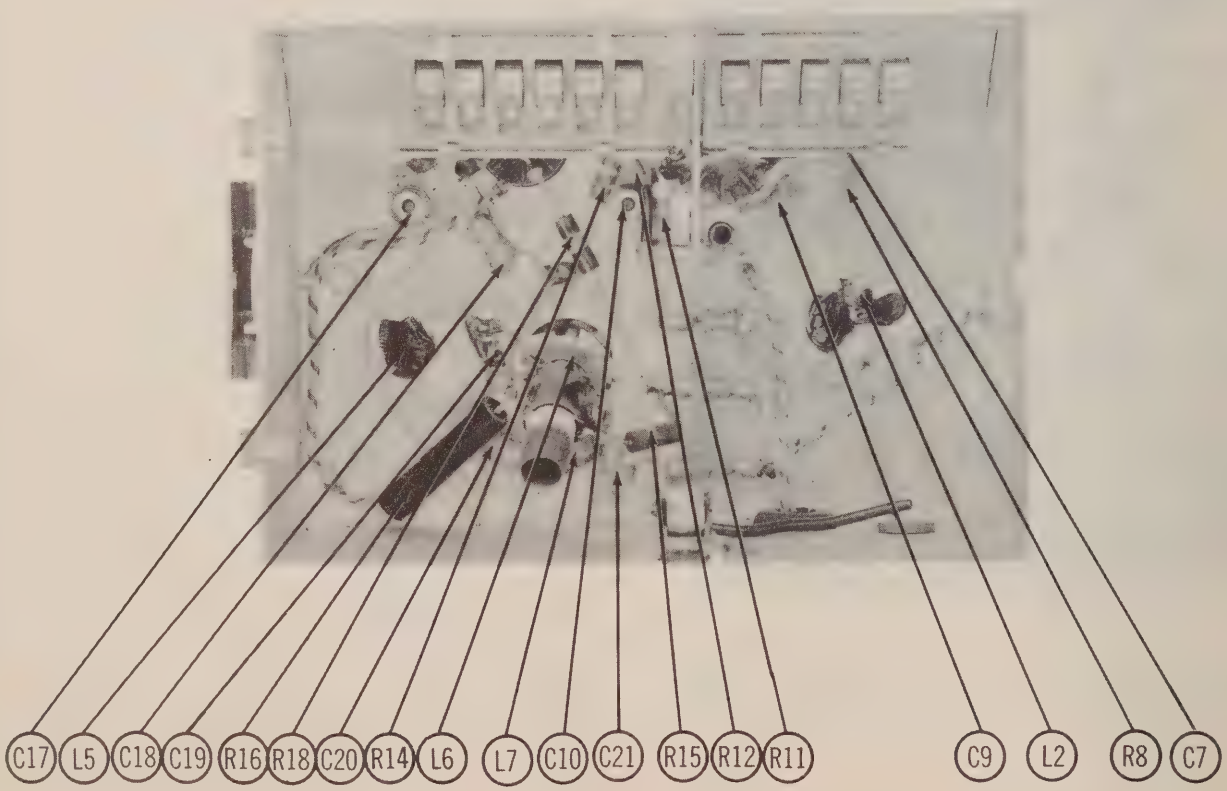
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	510KΩ	0Ω	.1Ω	0Ω	†2.6KΩ	110KΩ	INF	0Ω
V 2	6J8	†14KΩ	†19KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	42KΩ	218Ω	.1Ω	0Ω	†4KΩ	†4KΩ	0Ω		
V 4	6CB6	5.6KΩ	120Ω	.1Ω	0Ω	†7.8KΩ	†4KΩ	0Ω		
V 5	6CB6	40KΩ	218Ω	.1Ω	0Ω	†6.2KΩ	†4KΩ	0Ω		
V 6	6CB6	.2Ω	120Ω	.1Ω	0Ω	†8.7KΩ	†4KΩ	0Ω		
V 7	6AL5	.2Ω	0Ω	.1Ω	0Ω	0Ω	0Ω	5.6KΩ		
V 8	6CB6	5.6KΩ	150Ω	.1Ω	0Ω	†7.2KΩ	†3KΩ	0Ω		
V 9	6AU6	†6KΩ	†2.2KΩ	■.1Ω	■0Ω	370KΩ	†150Ω	†2.2KΩ		
V 10	6AU6	.1Ω	0Ω	.1Ω	0Ω	†4KΩ	†4KΩ	100Ω		
V 11	6AU6	47KΩ	0Ω	.1Ω	0Ω	†4KΩ	†4KΩ	100Ω		
V 12	6AL5	INF	INF	0Ω	.1Ω	0Ω	0Ω	20KΩ		
V 13	6SQ7	0Ω	10Meg	0Ω	470KΩ	470KΩ	†220KΩ	.1Ω	0Ω	
V 14	6K6GT	INF	.1Ω	†1.7KΩ	†1.4KΩ	470KΩ	†900Ω	0Ω	470KΩ	
V 15	6AU6	10Meg	0Ω	.1Ω	0Ω	†115KΩ	8KΩ	0Ω		
V 16	6SN7GT	168KΩ	8KΩ	68KΩ	220KΩ	†9.8KΩ	5.6KΩ	.1Ω	.0Ω	
V 17	6BL7GT	1Meg	#13KΩ	1.2KΩ	1.5Meg	#4.3Meg	0Ω	.1Ω	0Ω	
V 18	6SN7GT	650KΩ	†27KΩ	1.8KΩ	470KΩ	†225KΩ	1.8KΩ	.1Ω	0Ω	
V 19	6BG6G	470KΩ	0Ω	120Ω	470KΩ	470KΩ	†22KΩ	.1Ω	†8.3KΩ	TOP CAP #19Ω
V 20	6W4GT	INF	INF	150KΩ	#1Ω	†150Ω	#1Ω	#7Ω	#7Ω	
V 21	1X2A	PINS 1 THROUGH 9 HAVE INF RESISTANCE								TOP CAP #420Ω
V 22	5U4G	INF	25KΩ	INF	27Ω	INF	29Ω	INF	25KΩ	
V 23	20HP4	■0Ω	130KΩ	PIN 10 #10KΩ	PIN 11 †330KΩ	PIN 12 ■.1Ω	PIN 6 320KΩ			

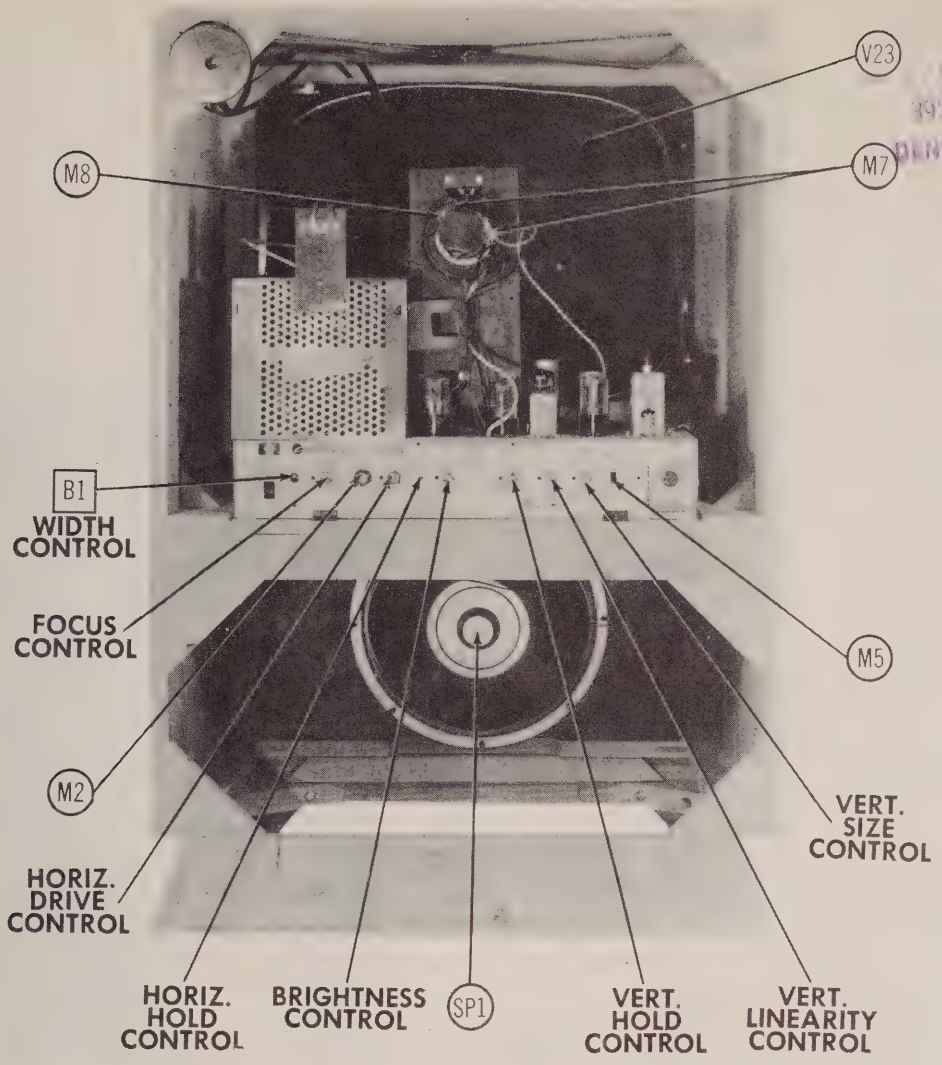
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V22
# MEASURED FROM PIN 3 OF V 20
■ MEASURED FROM 145 VDC LINE



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold adjustment to the center of the range over which the picture synchronizes horizontally.

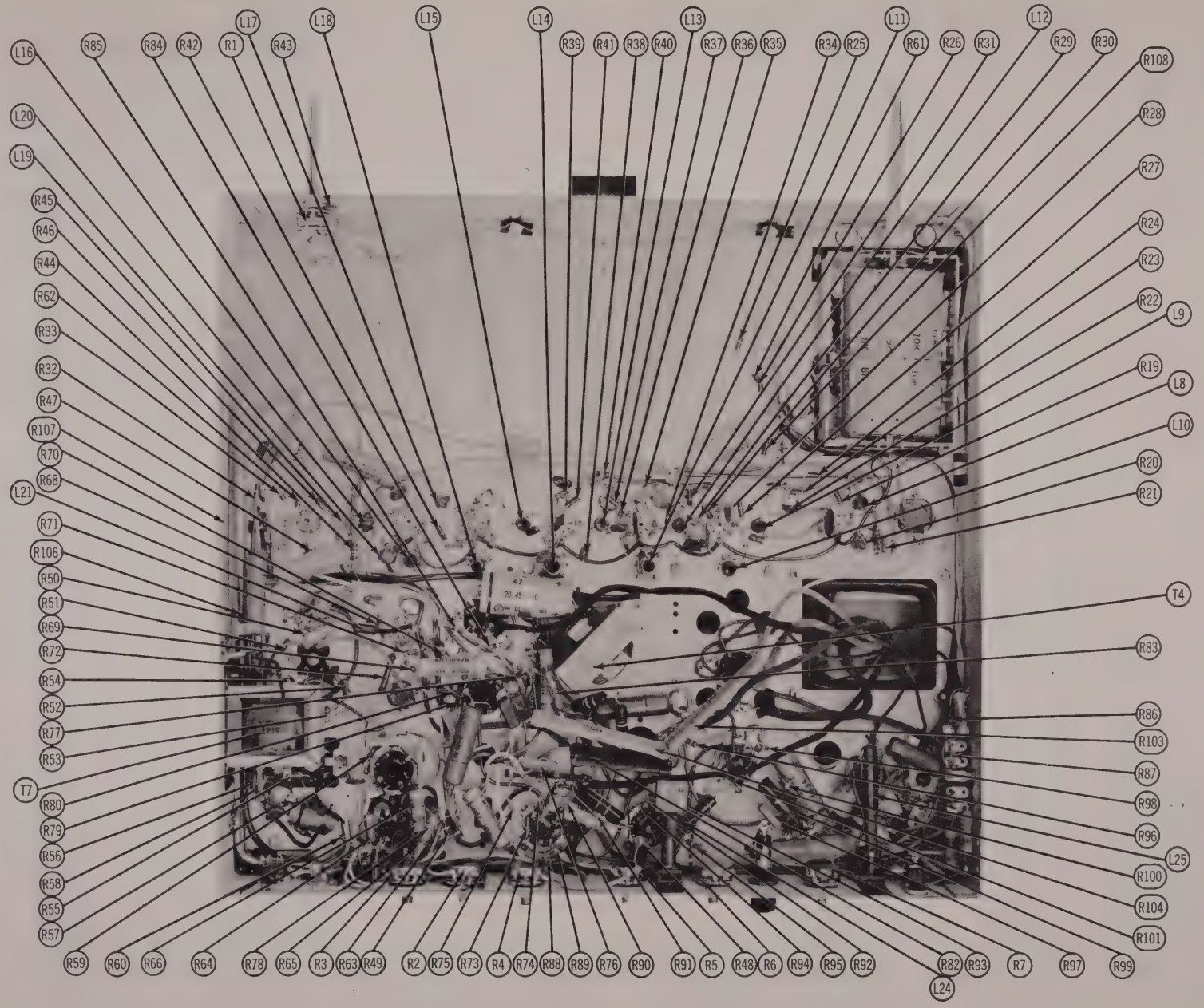
Turn the horizontal drive control counter clockwise until a thin bright vertical line appears in the picture. Then turn the control clockwise just far enough to remove the line. If no drive bar is obtained leave the control at fully counter clockwise.

Adjust the width slug, (B1), until the picture is slightly wider than necessary to fill the mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove 3 push on type Control Knobs from front panel.
2. Remove 7 wood screws holding rear cover. Remove rear cover.
3. Disconnect built in Antenna and Speaker.
4. Remove 4 wood screws holding Speaker. Remove Speaker.
5. Remove 2 wood screws. Remove 2 Clamps at back of Chassis.
6. Remove 2 nuts and 2 hook clamps holding Chassis. Remove Chassis.

NOTE. For Picture Tube Removal it is necessary to remove Chassis as outlined above.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HOFFMAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BK7	6BK7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CH	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CH	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CH	
V6	4th. Video IF Amp.	6CB6	6CB6	7CH	
V7	Video Detector	6AL5	6AL5	6BT	
V8	Video Output	6CB6	6CB6	7CH	
V9	Keyed AGC	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V11	2nd Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier – AGC Clamper	6SQ7	6SQ7	8Q	
V14	Audio Output	6K6GT	6K6GT	7S	
V15	Sync. Seperator	6AU6	6AU6	7BK	
V16	Sync. Phase Inv. – Horiz. AFC	6SN7GT	6SN7GT	8BD	
V17	Vert. Oscillator Vert. Output	6BL7GT	6BL7GT	8BD	
V18	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V19	Horiz. Output	6BG6G	6BG6G	5BT	
V20	Damper	6W4GT	6W4GT	4CG	
V21	HV Rectifier	1X2A	1X2A	9Y	
V22	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: HOFFMAN PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V23A	20HP4	20HP4	12C	Used in Chassis183T
B	20RP4		12C	Used in Chassis 183T, Models 20M101 & 20B102
C	17HP4	17HP4	12C	Used in Chassis 183B
D	17RP4	17RP4	12C	Used in Chassis 183B
E	17BP4	17BP4	12D	Used in Chassis 183M
F	17BP4A	17BP4A	12N	Used in Chassis 183M

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	4232	AFH3-54		UPT44445		TVL-3843	▲ Filter
B	30	475		PRS500/16					▲ Filter
C	30	475							■ Decoupling
C2A	40	475	4228	AFH4-96		UPT407		TVL-4822	■ Decoupling
B	10	475						TVA-1303	▲ Horiz. MV Dec.
C	5	50							Horiz. Output Cathode
D	20	450							▲ Vert. Output Dec.
C3	20	450	4233	PRS450/20		BR2045A		TVA-1709	Vert. Output Dec.
C4A	50	50	4230	AFH3-157		UP2045C		TVL-1810	▲ Vert. Output Cathode
B	20	475				BR505		TVA-1308	■ Audio Output Dec.
C	20	25						TVA-1205	Audio Output Cathode
C5	4	450	4236	PRS450/4		BR445		TVA-1702	Horiz. Output Screen
C6	5	50	4209	PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C7	3-8				829-10				Variable Trimmer
C8	2.2				TCZ-2.2		NP0K-2R2		Neutralizing Cap.
C9	1000			SI1000	D6-102	TM5D1	GP2L-102	5HK-D1	RF Amp. Fil. Bypass
C10	.5-3				829-3				Variable Trimmer
C11	100			SI100	D6-101	TM5T1	GP1K-101	5GA-T1	RF Amp. Plate Dec.
C12	1000			BPD-001	DD-102	TM5D1	801-001	5HK-D1	RF Amp. Grid Bypass
C13	100			SI100	D6-101	TM5T1	GP1K-101	5GA-T1	RF Coupling
C14	.5-3				829-3				Variable Trimmer
C15	20			SI20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C16	10			SI10N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C17	.5-3				829-3				Variable Trimmer
C18	1000			SI1000	D6-102	TM5D1	GP2L-102	5HK-D1	Conv. Fil. Bypass
C19	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C20	72						N750K-720		Fixed Padder
C21	300			SI300	D6-301		GP2K-301		IF Coupling
C22	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass *
C23	5000		4029	BPD-005	DD-502	TM5D5	811-005.	5HK-D5	Fil. Bypass
C24	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AGC Filter
C25A	4000		4036	BPD-2X004	D6-402	TM5DD4	822-004	5HK-2D4	1st. Video IF Dec.
B	4000				D6-402				1st. Video IF Fil.
C26	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Video IF Cathode
C27	220		4026	SI220	D6-221		GP2K-221	5GA-T22	IF Coupling
C28	2.2		4069		TCZ-2.2		NP0K-2R2		IF Coupling
C29	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C30A	4000		4036	BPD-2X004	D6-402	TM5DD4	822-004	5HK-2D4	2nd. Video IF Dec.
B	4000				D6-402				2nd. Video IF Fil.
C31	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Video IF Cathode
C32	220		4026	SI220	D6-221		GP2K-221	5GA-T22	IF Coupling
C33	2.2		4069		TCZ-2.2		NP0K-2R2		IF Coupling †
C34	2.2		4069		TCZ-2.2		NP0K-2R2		IF Coupling *
C35	120	500							Fixed Trimmer ¶
C36	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AGC Filter
C37	1	100	14200	484-1.0		PJ2W1		2TM-M1	AGC Filter ‡
C38A	4000		4036	BPD-2X004	D6-402	TM5DD4	822-004	5HK-2D4	3rd. Video IF Dec.
B	4000				D6-402				3rd. Video IF Fil.
C39	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	3rd. Video IF Cathode
C40	220		4026	SI220	D6-221		GP2K-221	5GA-T22	IF Coupling
C41	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	4th. Video IF Screen
C42	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	4th. Video IF Cathode
C43	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	4th. Video IF Fil.
C44	39				TCZ-39		NP0L-390		Fixed Trimmer
C45	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass
C46	220		4026	SI220	D6-221		GP2K-221	5GA-T22	IF Coupling
C47	5		4081	SI5NP0	TCZ-4.7		NP0K-050		IF Coupling

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA HOFFMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C48	20			SI20NP0	TCZ-20		NP0K-200		Fixed Trimmer
C49	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Video Det. Fil. Bypass
C50	5		4081	SI5NP0	TCZ-4.7		NP0K-050		Video Det. Filter
C51	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Video Output Screen
C52	47			SI47NP0	TCZ-47		NP0L-470	5TCC-Q47	Fixed Trimmer
C53	.22	200	4131	P488-22			PTE4P22	2TM-P22	Video Coupling
C54	500	1000	4075						Horiz. Feedback
C55	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AGC Filter †
C56	.22	200	4131	P488-22			PTE4P22	2TM-P22	AGC Filter *
C57	1500		4090	SI1500	D6-152	TM5D15	GP24-152	5HK-D15	1st. Sound IF Dec.
C58	500	500		1468-0005	D6-501	5W5T5	GP2K-501	1FM-35	1st. Sound IF Dec. *
C59	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Sound IF Cathode
C60	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Sound IF Fil.
C61	330		4010	SI330	D6-331		GP2K-331	5GA-T33	2nd. Sound IF Grid
C62	1500		4090	SI1500	D6-152	TM5D15	GP2L-152	5HK-D15	2nd. Sound IF Dec.
C63	500	500		1468-0005	D6-501	5W5T5	GP2K-501	1FM-35	2nd. Sound IF Dec. *
C64	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Sound IF Fil.
C65	47			SI47NP0	TCZ-47		NP0L-470	5TCC-Q47	Diode Load Cap. ††
C66	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass
C67	.0047	400	4127	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	De-Emphasis
C68	.0047	400	4127	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	Audio Coupling
C69	47	500	4009	1468-0005	D6-470	5W5Q5	GP1K-470	1FM-45	Tone Comp.
C70	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Audio Coupling
C71	.01	600	4105	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C72	.0047	600	4128	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	Audio Output Plate
C73	.0022	600	4136	P688-0022	D6-222	PTE6D22	GP2-333-222	6TM-D22	Sync. Coupling *
C74	220		4026	SI220	D6-221		GP2K-221	5GA-T22	Sync. Coupling
C75	.047	600	4133	P688-047	DF-503	PTE6S47		6TM-S47	Sync. Coupling
C76	.0047	600	4128	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	Vert. Sync. Coupling *
C77A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net
B	.005		●9695	P688-005	●PC-100	PTE6D5	GP2-333-502	●101C1	Vert. Integrator Net
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net
C78	3300	500							Vert. Osc. Grid Cap ¶¶
C79	3900	500	4085	1464-004		1DR5D4			Vert. Osc. Grid Cap. *
C80	.1	600	4144	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C81	.047	600	4141	P688-047		PTE6S47		6TM-S47	Vert. Discharge
C82	.047	600	4141	P688-047		PTE6S47		6TM-S47	Fixed Trimmer
C83	.01	400	4142	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Vert. Sweep Coupling ††
C84	.01	400	4142	P488-01	D6-103	PTE4S1	GP2- 333-103	4TM-S1	Vert. Sweep Coupling *
C85	.1	600	4144	P688-1	DF-104	PTE6P1		6TM-P1	Acc. Anode Bypass
C86	330		4010	SI330	D6-331		GP2K-331	5GA-T33	Horiz. Sync. Coupling
C87	.01	600	4142	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Horiz. AFC Plate
C88	.022	400	4135	P488-022		PTE4S22		4TM-S22	Horiz. Feedback
C89	5000		4029	BPD-005	DD-502	TM5D5	811-005	5HK-D5	Horiz. AFC Filter
C90	.01	600	4142	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Horiz. AFC Filter
C91	.1	200	4143	P288-1	DF-104	PJ2P1		2TM-P1	Horiz. AFC Filter
C92	3900	500	4085	1464-004		1DR5D4			Fixed Trimmer
C93	270	500	4022	1469-0003		5R5T3		MS-33	Horiz. MV Feedback
C94	.0047	600	4128	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	Horiz. Sweep Coupling
C95	250	500	4086	1469-00025		5R5T25			Horiz. Discharge
C96	220		4026	SI220	D6-221		GP2K-221	5GA-T22	Horiz. Discharge
C97	.22	600	4129	684-25		PTE6P25		6TM-P25	Horiz. Sweep Coupling
C98	500	20000	4056	HV20C	TV3-502	MM-C20T5			HV Filter
C99	.1	600	4144	P688-1	DF-104	PTE6P1		6TM-P1	RF Bypass
C100	.01	600	4105	689ZGXY-01		PJ6S1		6TM-S1	Line Filter
C101	.01	600	4105	689ZGXY-01		PJ6S1		6TM-S1	Line Filter

* Not used in all models
† Some models use 4.7MMF in this application (Part #4081)
¶ Some models use 130MMF in this application
†† Some models use 22MMF in this application (Part #14008)
¶¶ Some models use 7500MMF in this application (Part #4083)
‡‡ Some models use .0047MFD in this application (Part #4149)
‡ Chassis 183M uses .22MFD in this application (Part #4131)
● Items C77A, C77B, C77C, R76A, R76B, R76C are combined in one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
				Concentrikit			
R1A	1500Ω	½	4833-2	B17-110 *	RTV-247	SBB-626-S	Contrast Control - Panel
B	500KΩ	½		B13-133 *			Volume Control - Rear
C	Shaft End		Not Req.	E187 *			Attach per instructions in Concentrikit
D	Switch		Not Req.	78-1 *			Attach per instructions in Concentrikit
R2A	3000Ω	½	4850	QII-112	AG-15-S	AN-7	Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R2A per instructions
R3A	2.5Meg		4851	QII-239	AG-84-S	AN-83	Vert. Size Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R3A per instructions
R4A	1Meg	½	4852	QII-137	AG-61-S	AN-69	Vert. Hold Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	50KΩ	½	4853	QII-123	AG-44-S	AN-31	Brightness Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6A	100KΩ	½	4849	QII-128	AG-49-S	AN-40	Horiz. Drive Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7A	2Meg	½	4864	QII-139	AG-83-S	AN-75	Focus Control - See Note
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R7A per instructions

* Additional Parts to be used with "Concentrikit"
Note. Chassis #183M uses a 10KΩ Focus Control (Part #4848)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R8	47KΩ	½		BTS-47K	AGC Network
R9	22KΩ	½			Antenna Coil Shunt
R10	220KΩ	20% ½			RF Amp. Grid
R11	220KΩ	20% ½			Voltage Divider
R12	1000Ω	20% ½		BTS-1000	RF Amp. Plate Decoupling
R13	4700Ω	½		BTS-4700	Mixer Grid
R14	220KΩ	20% ½			Mixer Grid
R15	15KΩ	20% ½			Mixer Plate
R16	10Ω	½			Parasitic Suppressor

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	IDENTIFICATION CODES
R17	10KΩ	½		BTS-10K	Osc. Grid
R18	10KΩ	½		BTS-10K	Osc. Plate
R19	33000Ω 5%	½	4648	BTS-3300 5%	1st. Video IF Amp. Grid
R20	68Ω	½	4593		1st. Video IF Amp. Cathode
R21	150Ω 20%	½	4510	BTS-150	1st. Video IF Amp. Cathode
R22	1000Ω 20%	½	4542	BTS-1000	1st. Video IF Amp. Decoupling
R23	39KΩ	½	24636	BTS-39K	AGC Network - See Note 1
R24	330Ω	½	4509	BTS-330	AGC Network
R25	1000Ω 20%	½	4542	BTS-1000	AGC Network
R26	1000Ω 20%	½	4542	BTS-1000	Decoupling
R27	5600Ω 5%	½	4603		2nd. Video IF Amp. Grid
R28	120Ω	½	4546	BTS-120	2nd. Video IF Amp. Cathode
R29	3900Ω 5%	½	4654	BTS-3900 5%	2nd. Video IF Amp. Plate
R30	1000Ω 20%	½	4542	BTS-1000	2nd. Video IF Amp. Decoupling
R31	1000Ω 20%	½	4542	BTS-1000	AGC Network
R32	3300Ω	½	4607	BTS-3300	AGC Network
R33	470KΩ	½	4622	BTS-470K	AGC Network - See Note 1
R34	68Ω	½	4593		3rd. Video IF Amp. Cathode
R35	150Ω 20%	½	4510	BTS-150	3rd. Video IF Amp. Cathode
R36	22000Ω 5%	½	24525	BTS-2200 5%	3rd. Video IF Amp. Plate
R37	1000Ω 20%	½	4542	BTS-1000	3rd. Video IF Amp. Decoupling
R38	120Ω	½	4546	BTS-120	4th. Video IF Amp. Cathode
R39	5600Ω 5%	½	4603		4th. Video IF Amp. Plate
R40	1000Ω 20%	½	4542	BTS-1000	4th. Video IF Amp. Plate Decoupling
R41	1000Ω 20%	½	4542	BTS-1000	4th. Video IF Amp. Decoupling
R42	5600Ω 5%	½	4603	BTS-5600 5%	Video Output Grid
R43	680Ω	½	4514	BTS-680	Contrast Control Shunt
R44	47KΩ	½	4504	BTS-47K	Isolation
R45	1200Ω	½	4553	BTS-1200	Video Output Plate
R46	3900Ω 5%	½	4654	BTS-3900 5%	Video Output Plate
R47	330KΩ 20%	½	4677	BTS-330K	Video Peaking
R48	47KΩ	1		BTA-47K	Voltage Divider - See Note 2
R49	100KΩ 20%	½	4511	BTS-100K	Picture Tube Grid
R50	100Ω	½	4566	BTS-100	1st. Sound IF Amp. Cathode
R51	1000Ω 20%	½	4542	BTS-1000	1st. Sound IF Amp. Decoupling
R52	47KΩ	½	4504		2nd. Sound IF Amp. Grid
R53	100Ω	½	4566	BTS-100	2nd. Sound IF Amp. Cathode
R54	1000Ω 20%	½	4542	BTS-1000	2nd. Sound IF Amp. Decoupling
R55	270Ω	½	4663	BTS-270	Balancing
R56	15KΩ 20%	½	4521	BTS-15K	De-emphasis
R57	10KΩ	½	4597	BTS-10K	Ratio Det. Diode Load
R58	10KΩ	½	4597	BTS-10K	Ratio Det. Diode Load
R59	10Meg 20%	½	4505	BTS-10Meg	AF Amp. Grid
R60	1Meg 20%	½	4513	BTS-1Meg	Tone Compensation
R61	1.1Meg 5%	½	34590	BTS-1.1Meg 5%	AGC Clamper Load - See Note 3
R62	330KΩ	½	34531	BTS-330K	AGC Network - See Note 3
R63	470KΩ	½	4506	BTS-470K	Output Grid
R64	470Ω	1	4531	BTA-470	Output Cathode
R65	470Ω	1	4531	BTA-470	Output Decoupling
R66	220KΩ	½	4618	BTS-220K	AF Amp. Plate
R67	470KΩ	½	4506	BTS-470K	Sync. Seperator Grid
R68	10Meg 20%	½	4505	BTS-10Meg	Sync. Seperator Grid - See Note 4
R69	100KΩ 20%	½	4511	BTS-100K	Sync. Seperator Plate - See Note 5
R70	12KΩ 20%	½	4660	BTS-12K	Sync. Seperator Plate - See Note 6
R71	22KΩ	½	4628	BTS-22K	Sync. Seperator Screen
R72	10KΩ	½	4597	BTS-10K	Voltage Divider - See Note 7
R73	220KΩ	½	4618	BTS-220K	Sync. Phase Inv. Grid
R74	6800Ω	½	4557	BTS-6800	Sync. Phase Inv. Cathode
R75	6800Ω	½	4557	BTS-6800	Sync. Phase Inv. Plate - See Note 8
R76A	22KΩ	½		BTS-22K	Integrator Network
B	8200Ω	½	● 9695	BTS-8200	Integrator Network
C	8200Ω	½		BTS-8200	Integrator Network
R77	1Meg	½	4513	BTS-1Meg	Vert. Osc. Grid
R78	3.3Meg	1	34643	BTA-3.3Meg	Vert. Osc. Plate
R79	1Meg 20%	½	4513	BTS-1Meg	Vert. Output Grid
R80	6800Ω	½	4557	BTS-6800	Vert. Peaking - See Note 9
R81	560Ω	½	4507	BTS-560	Vert. Output Cathode
R82	10KΩ	5	4737	1 3/4A-10K	Decoupling - Wire Wound
R83	1500Ω	1	4581	BTA-1500	Vert. Output Plate Decoupling
R84	100KΩ 20%	½	4511	BTS-100K	Bleeder
R85	100KΩ 20%	½	4511	BTS-100K	Bleeder
R86	3300Ω	½	4607	BTS-3300	Horiz. AFC Plate
R87	4700Ω	½	4543	BTS-4700	Horiz. AFC Plate
R88	68KΩ 20%	½	4661	BTS-68K	Horiz. AFC Cathode
R89	100KΩ	½	4571	BTS-100K	Horiz. AFC Grid
R90	12KΩ 20%	½	4660	BTS-12K	Horiz. AFC Filter
R91	470KΩ 20%	½	4506	BTS-470K	Horiz. AFC Filter
R92	1800Ω	½	4640	BTS-1800	Horiz. MV Cathode
R93	470KΩ	½	4622	BTS-470K	Horiz. MV Grid
R94	5600Ω	½	4629	BTS-5600	Horiz. MV Plate
R95	150KΩ	½	4589	BTS-150K	Horiz. MV Plate
R96	22KΩ	½	4628	BTS-22K	Decoupling
R97	8200Ω	½	4651	BTS-8200	Horiz. Peaking
R98	470KΩ	½	4506	BTS-470K	Horiz. Output Grid
R99	1200Ω	2	4657	BW-2-120	Horiz. Output Cathode
R100	8200Ω	1	4658	BTA-8200	Horiz. Output Screen
R101	100Ω	½	4566		Parasitic Suppressor
R102	4.7Ω	½	4719		HV Rectifier Filament
R103	150Ω	10	4730	1 3/4A-150	Filter - Wire Wound
R104	7500Ω	15	4753	2D-750	Voltage Divider - See Note 10. - Wire Wound
R105	2500Ω	5	4749		Voltage Divider - See Note 11 - Wire Wound
R106	180Ω	2			Voltage Divider - See Note 12
R107A	1100Ω	5	4731		Voltage Divider - Wire Wound
B	800Ω	5			Voltage Divider - Wire Wound
R108	680Ω	½		BTS-680	Decoupling - See Note 3

Note 1. Chassis #183M uses a 100KΩ Resistor in this application (Part #4511)
Note 2. Some Models use a 68KΩ Resistor in this application (Part #4661)
Note 3. Not used in Chassis #183M.
Note 4. Some Models use a 4.7Meg Resistor in this application (Part #4544)
Note 5. Some Models use a 82KΩ Resistor in this application (Part #24670)
Note 6. Some Models use a 33KΩ Resistor in this application (Part #24627)
Note 7. Some Models use a 18KΩ Resistor in this application (Part #4662)
Note 8. Some Models use a 3300Ω Resistor in this application (Part #4607)
Note 9. Some Models use a 5600Ω Resistor in this application
Note 10. Some Models use a 1500Ω Resistor in this application (Part #4725)
Note 11. Not used in Chassis #183B and #183T
Note 12. Not used in all Models.
● Items R76A, R76B, R76C, C77A, C77B, C77C are combined in one unit

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ②2.1A	760VCT .200ADC	5VAC ②3A	6.3VAC ②9.2A	5023	P-8169	P-3067 P-3070 ①	COLORADO
			SEC.4	SEC.5				
			6.3VAC ②1.2A	6.3VAC ②.9A				

① Mount beneath chassis and use for SEC.#5

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	180Ω	980Ω	5127	A-8122	A-4003	TB0-2	Vert. Oscillator Trans.
T3	430Ω Tapped ②.9Ω 2.5Ω 9.5Ω 18Ω & 35Ω	0Ω	5148				Horiz. Output Trans.
T4	1200Ω Tapped ②11Ω		5140	A-8123	A-3037	TS0-5 ②	Vert. Output Trans.
T5A	33Ω		5389		MDF-71		Hor. Deflection Coils
B	45Ω						Vert. Deflection Coils
T6	1500Ω		5341				Focus Coil

② Drill One New Mounting Hole

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	7.5KΩ	3.1Ω	370Ω	.3Ω	5147	A-3823	A-3020	R0-13	

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA HOFFMAN PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1A	P.M.	3.7Ω	9070 ① 9067-1 ② 9074 ③ 9079 ⑤	12J12	12A4A	① Used in Models 20M500, 20B501, 20P502, 896B & 897B ② Used in Models 20M101, 20B102, 636B & 637B ③ Used in Models 886B & 887B
	CONE DIA.	V. C. DIA.				
SP1B	12"	1"				

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA HOFFMAN PART No.	MERIT PART No.	NOTES
L1	Ant. Coil	0Ω		5360		Channel 2
L2	Fil. Choke	0Ω				
L3	RF Choke	0Ω				
L4	RF, Mixer Grid & Osc. Coils	0Ω		5348		Channel 2
L5	Fil. Choke	0Ω				
L6	Conv. Plate	.8Ω				
L7	RF Choke	.3Ω				
L8	1st. Video IF	.1Ω		5298		
L9	2nd. Video IF	.1Ω		5298		
L10	27.6MC Trap	.2Ω		5396		
L11	21.6MC Trap	0Ω		5394		
L12	3rd. Video IF	.1Ω		5298		
L13	4th. Video IF	.1Ω		5298		
L14	21.6MC Trap	0Ω		5299		
L15	5th. Video IF	.1Ω		5298		
L16	20.1MC Trap	.2Ω		5395		
L17	Peaking Coil	5Ω		5338		Wound on 12KΩ Resistor, 60 Microhenries
L18	4.5MC Trap	2.4Ω		5402		
L19	Peaking Coil	16Ω		5339		Wound on 33KΩ Resistor, 350 Microhenries
L20	Peaking Coil	15.2Ω		5340		350 Microhenries
L21	Fil. Choke	0Ω				
L22	Sound IF	0Ω	0Ω	5304	TV-104	
L23	Ratio Det. Trans.	.1Ω	.1Ω	5305	TV-111	Tap② .1Ω
L24	Horiz. Osc.	65Ω		5300	TV-163	
L25	Width Coil	.9Ω		5317		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA HOFFMAN PART No. FUSE	HOFFMAN PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG	1/4A. 250V.	9515		312.250	357001	AGC1/4	4405
M2	3AG Slo-Blo	3A. 125V.	9648		31300.3	342001	MDL3	HKP

PROPERTY OF
COLORADO

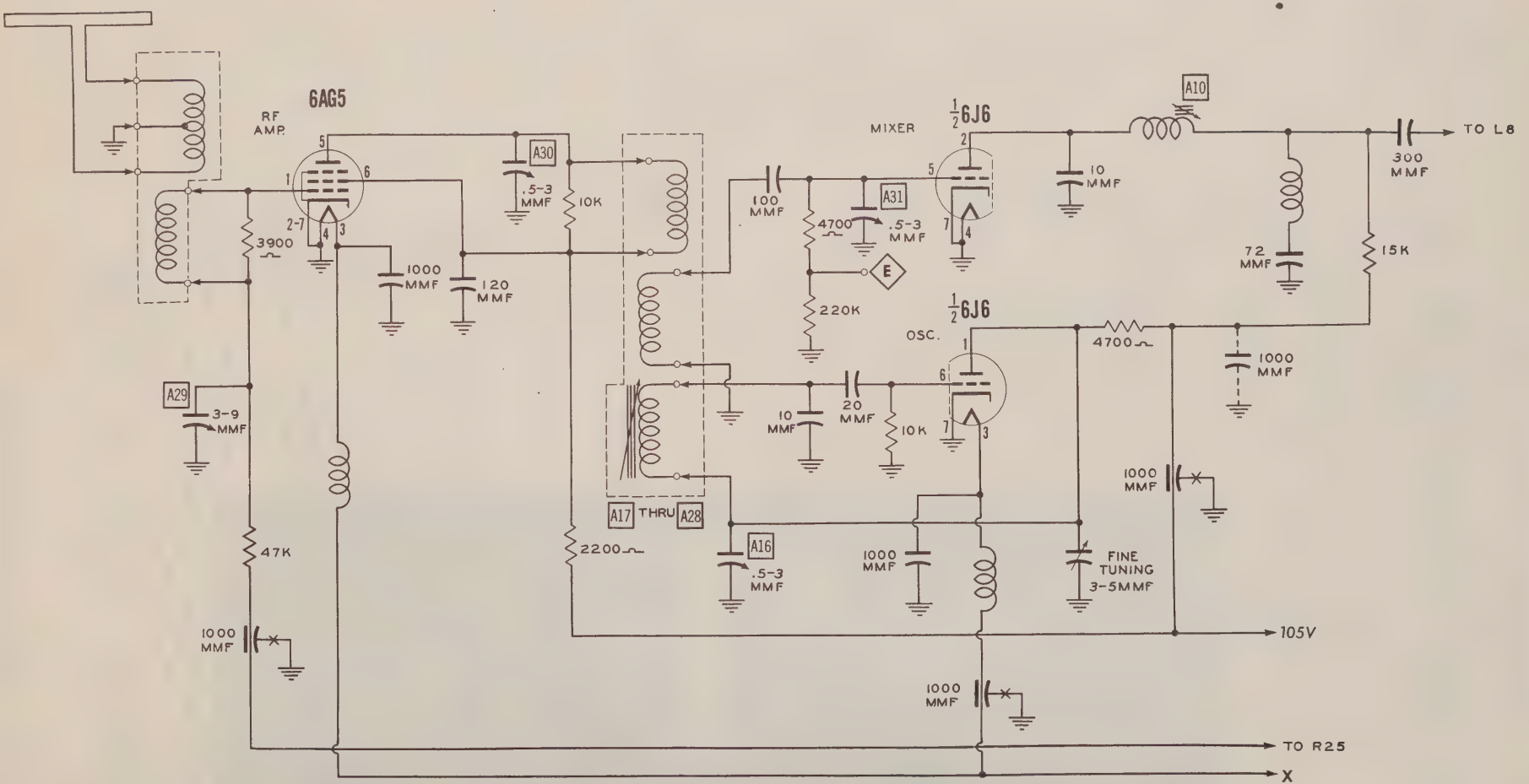
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					HOFFMAN PART No.		
M3	Bayonet	7.5	.2	White	9676		Type #51

MISCELLANEOUS

ITEM No.	PART NAME	HOFFMAN PART No.	NOTES
M4A	RF Tuner	9717	RF-8
B	RF Tuner	9716	RF-7 Alternate
C	RF Tuner		RF-6 Alternate
M5	Switch	6028	
M6	Switch	6007	Chassis 183M
M7	Centering Magnet	9722	Chassis 183B, 183T
M8A	Ion Trap	9713	
B	Ion Trap	9657	
	Knob	33551	Channel Selector Assembly
	Knob	33505	Contrast
	Knob	33520	Off/On Volume
	Knob	3691	Ant. Tuning
	Ant. Coils	5361	Channel 3
	Ant. Coils	5362	Channel 4
	Ant. Coils	5363	Channel 5
	Ant. Coils	5364	Channel 6
	Ant. Coils	5365	Channel 7
	Ant. Coils	5366	Channel 8
	Ant. Coils	5367	Channel 9
	Ant. Coils	5368	Channel 10
	Ant. Coils	5369	Channel 11
	Ant. Coils	5370	Channel 12
	Ant. Coils	5371	Channel 13
	RF, Mixer Grid & Osc. Coil	5349	Channel 3
	RF, Mixer Grid & Osc. Coil	5350	Channel 4
	RF, Mixer Grid & Osc. Coil	5351	Channel 5
	RF, Mixer Grid & Osc. Coil	5352	Channel 6
	RF, Mixer Grid & Osc. Coil	5353	Channel 7
	RF, Mixer Grid & Osc. Coil	5354	Channel 8
	RF, Mixer Grid & Osc. Coil	5355	Channel 9
	RF, Mixer Grid & Osc. Coil	5356	Channel 10
	RF, Mixer Grid & Osc. Coil	5357	Channel 11
	RF, Mixer Grid & Osc. Coil	5358	Channel 12
	RF, Mixer Grid & Osc. Coil	5359	Channel 13



ALTERNATE TUNER SCHEMATIC

PHOTOFACT* Folder

*TRADE MARK

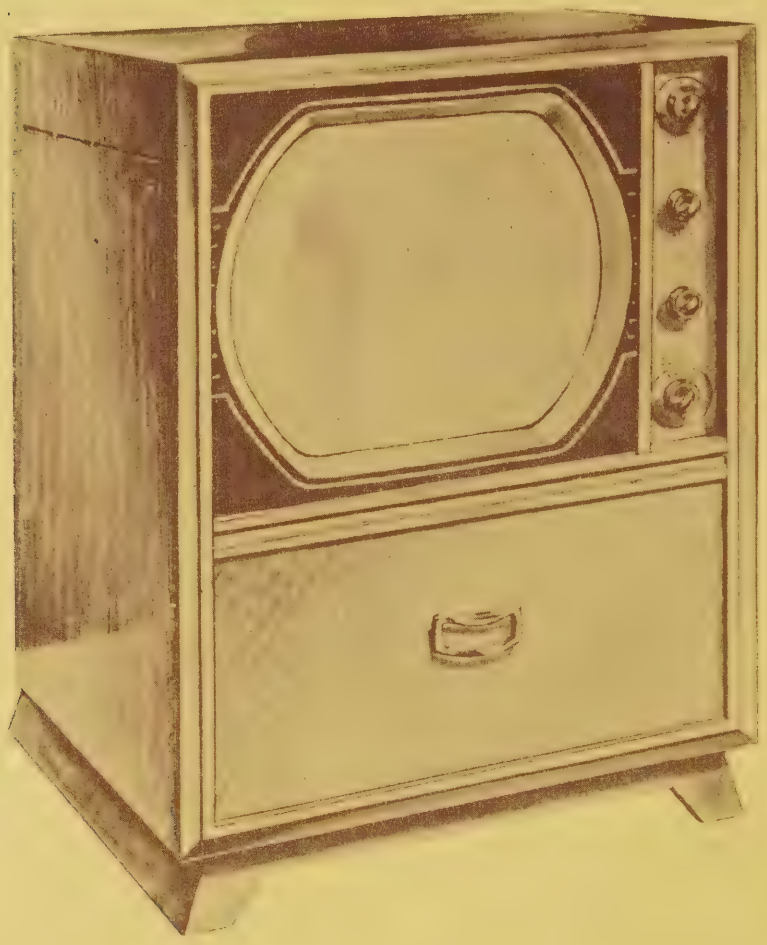
HYDE PARK MODELS MST12, MST14, 14TR, 16TR, 17CD (1st. Prod.), 17CRR (1st. Prod.), 17ROG (1st. Prod.), 20CD (1st. Prod.), 20TR, 112X, 203D (1st. Prod.), 312, 819, 3163CR, 8163CR, 8193CM

PROPERTY OF
E. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL 8193CM

HYDE PARK MODELS MST12, MST14, 14TR, 16TR, 17CD (1st. Prod.), 17CRR (1st. Prod.), 17ROG (1st. Prod.), 20CD (1st. Prod.), 20TR, 112X, 203D (1st. Prod.), 312, 819, 3163CR, 8163CR, 8193CM

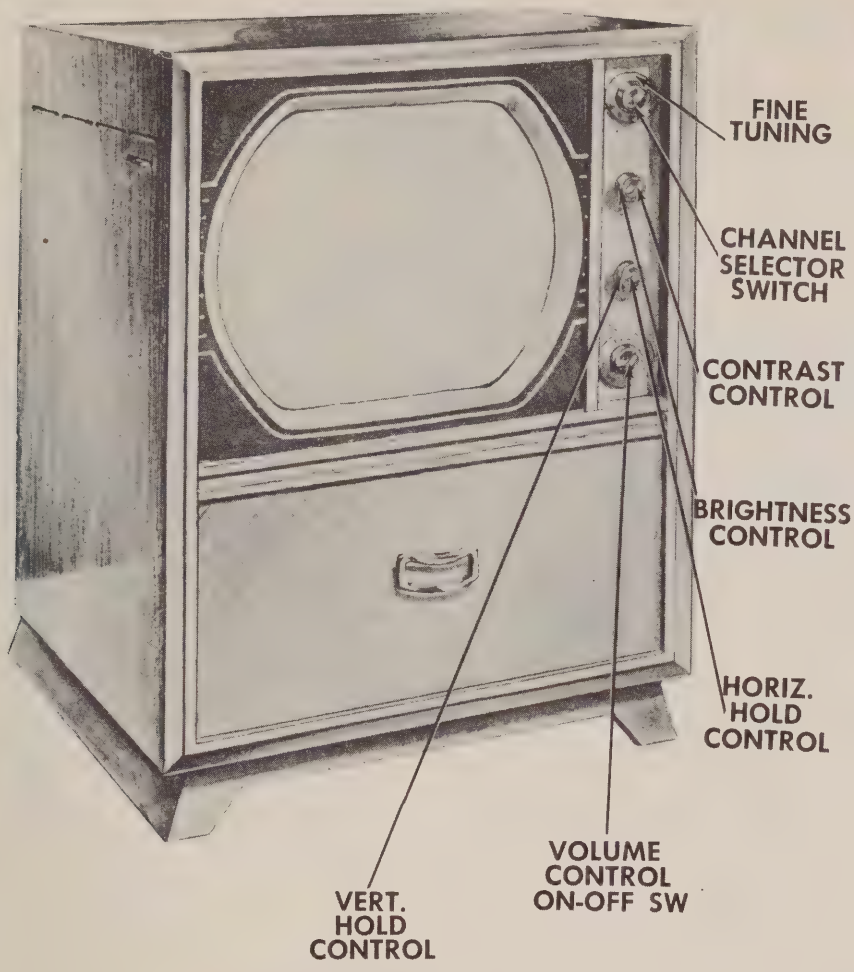
HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5-52 SET 168 FOLDER 9

PHOTOFACT* Folder

HYDE PARK MODELS MST12, MST14, 14TR, 16TR, 17CD (1st. Prod.), 17CRR (1st. Prod.), 17ROG (1st. Prod.), 20CD (1st. Prod.), 20TR, 112X, 203D (1st. Prod.), 312, 819, 3163CR, 8163CR, 8193CM



Hyde Park Model 8193CM

TRADE NAME	Hyde Park Models MST12, MST14, 14TR, 16TR, 17CD (1st. Prod.) 17CRR (1st. Prod.) 17ROG (1st. Prod.) 20CD (1st. Prod.) 20TR, 112X, 203D (1st. Prod.) 312, 819, 3163CR, 8163CR, 8193CM
SUPPLIER	Macys Dept. Store, New York, N. Y.
TYPE SET	Television Receiver
TUBES	Twenty-One

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.85 Amp. @ 117 VAC
TUNING RANGE - CHANNELS 2 thru 13

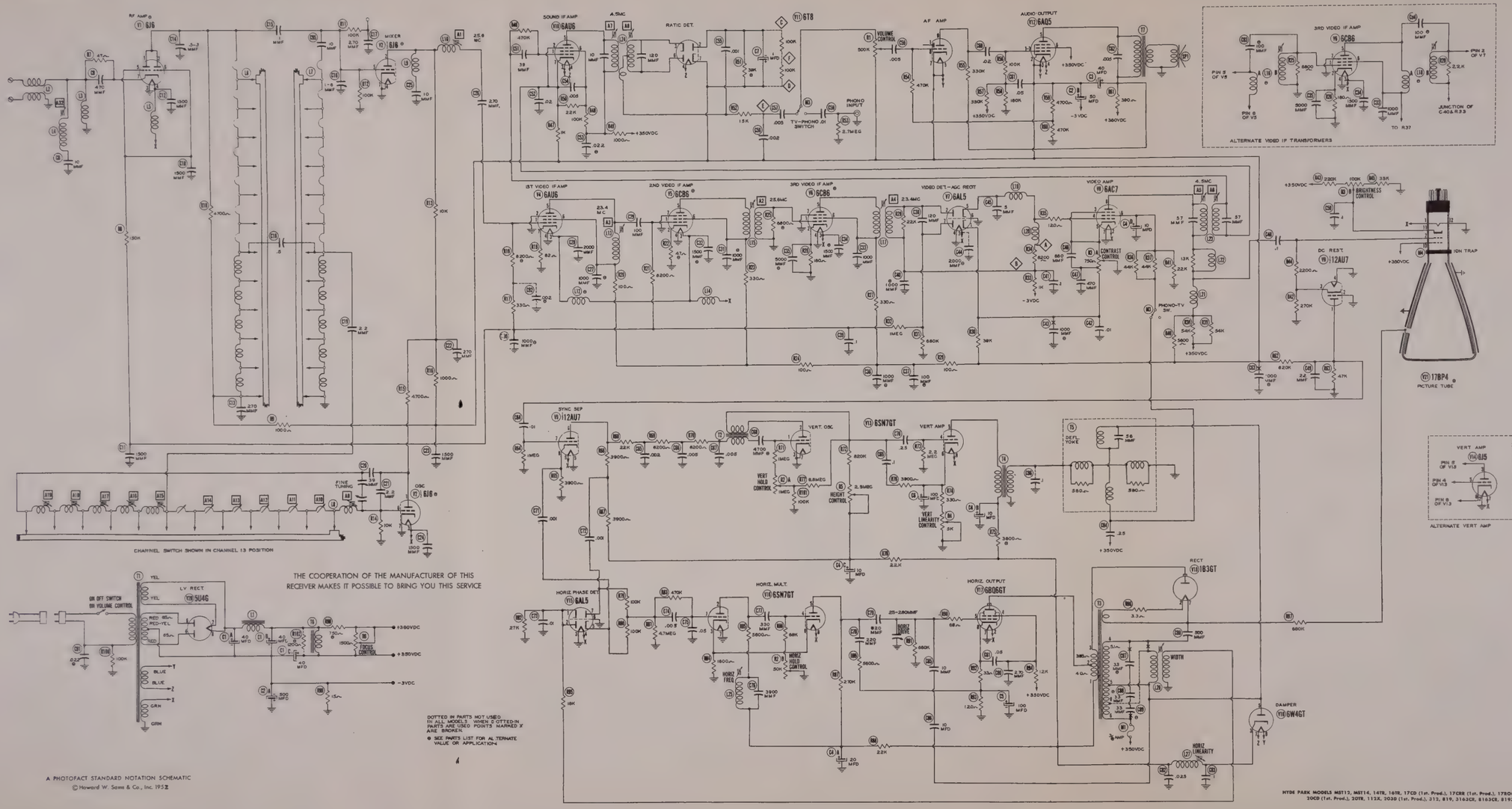
INDEX

Alignment Instructions 6, 7
FM Trap Adjustment 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Description 12, 13, 14
Photographs
Capacitor and Alignment Identification 4, 9
Chassis-Top View 3, 11
Photographs (cont.)
RF Tuner 10
Resistor and Inductor Identification 15, 16
Schematic (Main) 2
Schematic (3 Tube Tuner) 7
Tube Placement Charts 5
Voltage and Resistance Measurements 8

HYDE PARK MODELS MST12, MST14, 14TR, 16TR, 17CD (1st. Prod.), 17CRR (1st. Prod.), 17ROG (1st. Prod.), 20CD (1st. Prod.), 20TR, 112X, 203D (1st. Prod.), 312, 819, 3163CR, 8163CR, 8193CM

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

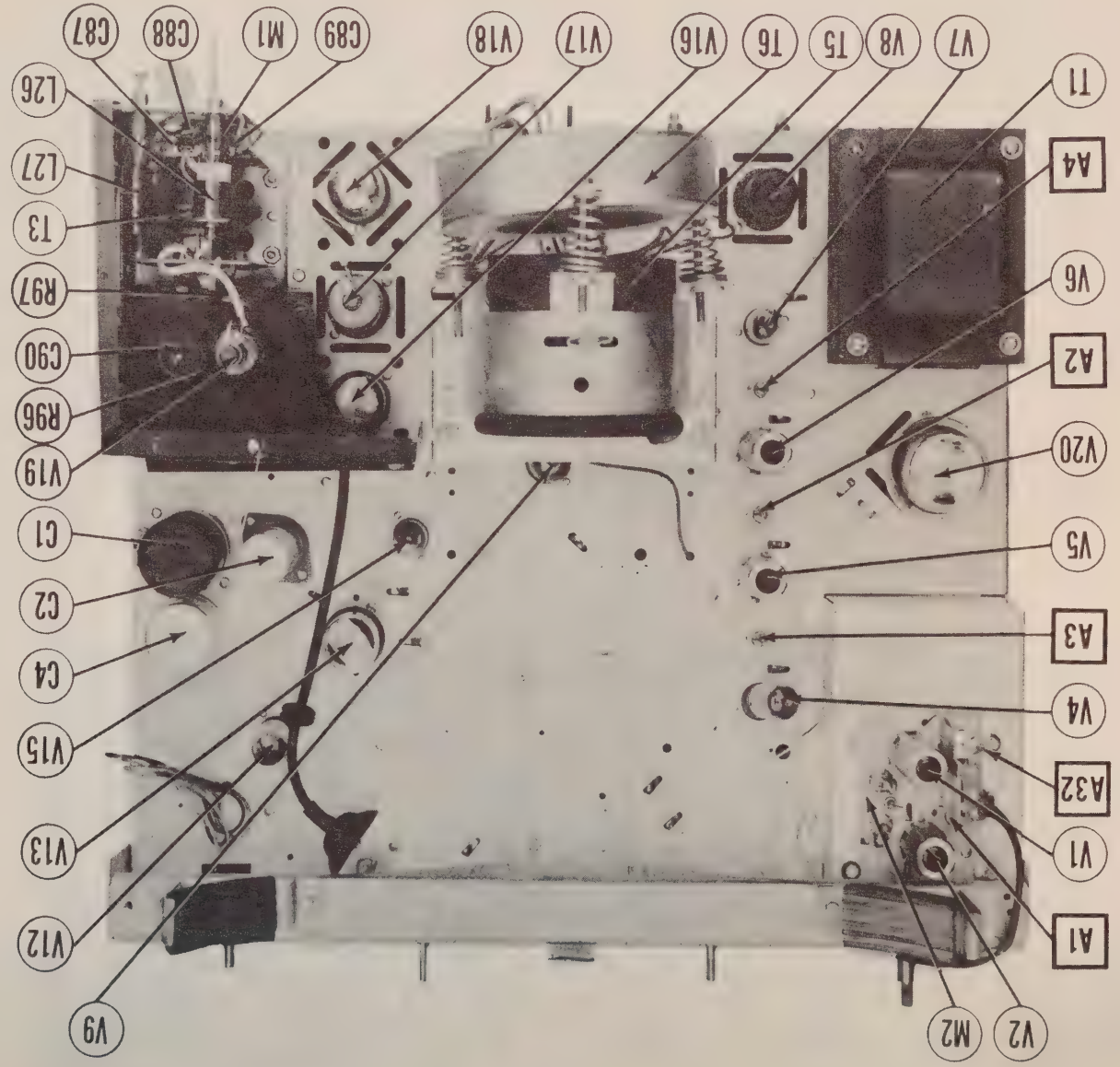
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1952

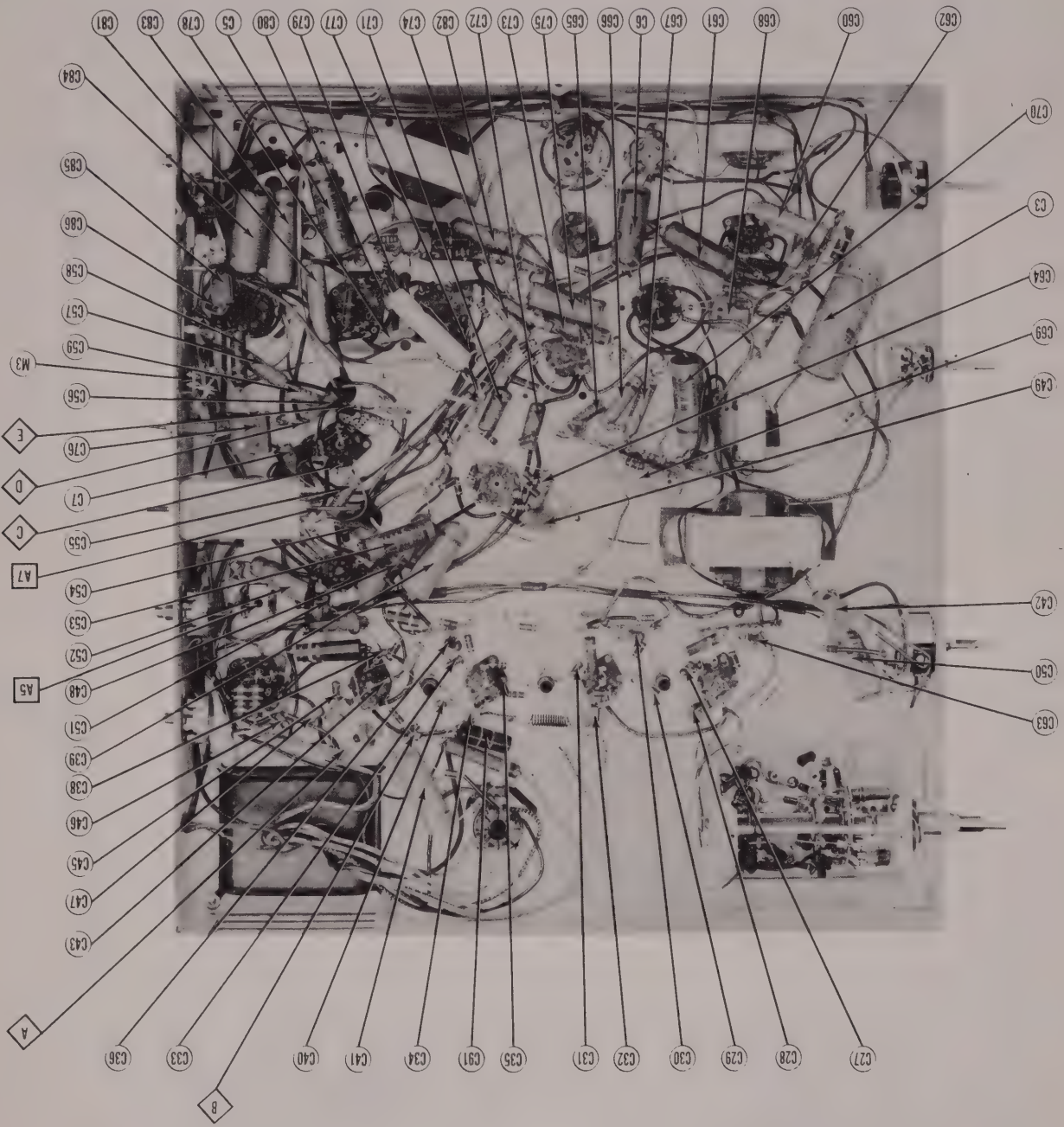
HYDE PARK MODELS MST12, MST14, 14TR, 16TR, 17CD (1st. Prod.), 17CRR (1st. Prod.), 17ROG (1st. Prod.),
20CD (1st. Prod.), 20TR, 112X, 203D (1st. Prod.), 312, 819, 3163CR, 8163CR, 8193CM

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF
T. F. BLANKI
3924 MEADE S
DENVER, COLORADO



TUBE PLACEMENT CHART

3924 W
DENVER, COLO

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V16), from its socket.

VIDEO IF ALIGNMENT

If the set has a two tube tuner, remove the converter tube,(V2) from its socket and replace it with a 6J6 which has pin 1 removed.
If the set has a three tube tuner, remove the oscillator tube, (V3), from its socket. This will disable the local oscillator and prevent the possibility of erroneous indications.
During video IF alignment the common lead of the VTVM is connected to approximately 3 volts with respect to chassis, avoid grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, or mixer tube, (see note above). Low side to chassis.	25.6MC	Any	DC probe to Point A. Common to Point B.	A1, A2	Adjust for maximum deflection.
2.	"	"	23.4MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (or mixer tube). Low side to chassis.	24MC (10MC SWP)	21.6MC 22.6MC 25.6MC 26.1MC	Any	Vert. Amp. to Point A. Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

During sound IF alignment the common lead of the VTVM is connected to approximately 135 volts with respect to chassis, avoid grounding or touching the VTVM case.
Connect two matched 100KΩ (± 1%) resistors in series between Point C and Point D . The junction of these resistors is alignment Point F as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.001MFD.	High side to pin 4 (Grid) of 6AC7, (V8). Low side to chassis.	4.5MC (unmod.)	Any	DC probe to Point C. Common to Point D.	A5, A6, A7	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to Point E. Common to Point F.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.001MFD.	High side to pin 4 (Grid) of 6AC7, (V8). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. to Point C. Low side to chassis.	A5, A6, A7	Disconnect stabilizor capacitor C7. Adjust for maximum amplitude and symmetry as per fig. 2.
5.	"	"	"	"	"	Vert. Amp. to Point E. Low side to chassis.	A8	Reconnect capacitor C7. Adjust A8 so 4.5MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT (TWO TUBE TUNER)

Remove the dummy converter tube and replace the original 6J6 in its socket.
Since all of the oscillator coils are in series it is essential that the highest channel to be adjusted is aligned first and progess towards the lowest channel.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point A. Low side to chassis.	A9	Adjust to place sound marker as shown in fig. 4. The video marker should be at 50%
			207MC (10MC SWP)	205.25MC 209.75MC	12		A10	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A11	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A12	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A13	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A14	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A15	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A16	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A17	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A18	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A19	

The RF portion of this tuner has been properly adjusted at the factory and is very stable. Alignment of this portion should not be required in the field.

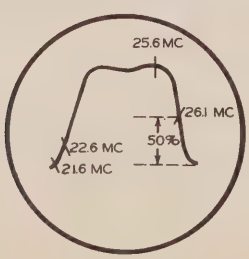


FIG. 1

FIG. 2

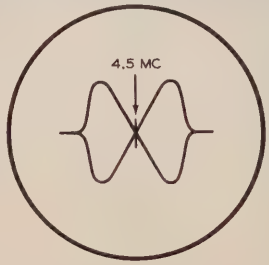


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT (THREE TUBE TUNER)

Replace the oscillator tube in its socket.
Since the channel two oscillator is in parallel with each of the other coils, it is essential that channel 2 be aligned first. The order of alignment for the remaining channels is not important.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. Amp. to Point A. Low side to chassis.	A20	Adjust to place sound marker as shown in fig. 4. The video marker should be at 50%.
			63MC (10MC SWP)	61.25MC 65.75MC	3		A21	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A22	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A23	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A24	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A25	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A26	
			189MC (10MC SWP)	187.25MC 190.75MC	9		A27	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A28	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A29	
			207MC (10MC SWP)	205.25MC 209.75MC	12		A30	
			213MC (10MC SWP)	211.25MC 125.75MC	13		A31	

The RF portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

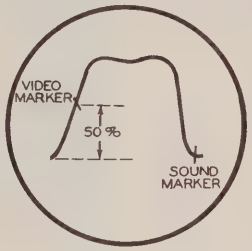
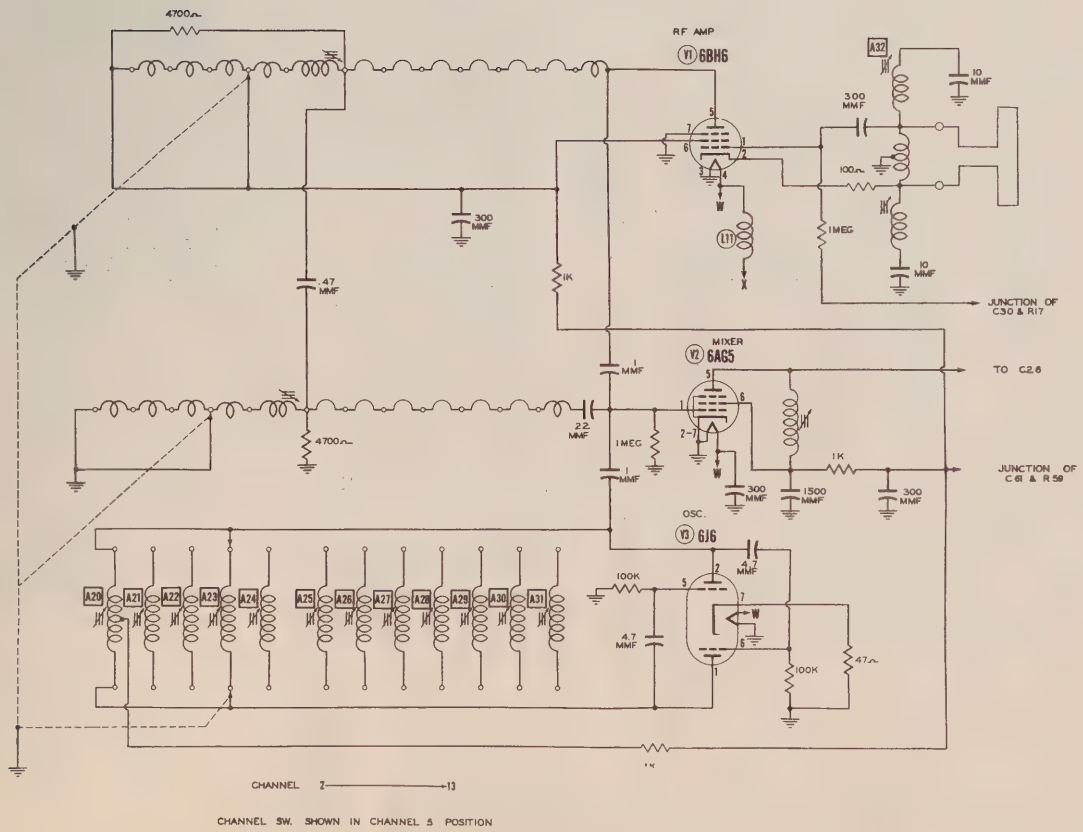


FIG. 4



3 TUBE TUNER SCHEMATIC

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	115VDC	115VDC	0V	6.2VAC	-.1VDC	-.1VDC	.4VDC		
V 2	6J6	90VDC	80VDC	6.3VAC	0V	-1.2VDC	§-7.5VDC	0V		
V 3	6J6	NOT USED IN ALL MODELS								
V 4	6AU6	-.1VDC	0V	6.3VAC	0V	125VDC	125VDC	.5VDC		
V 5	6CB6	-.1VDC	.5VDC	6.3VAC	0V	125VDC	125VDC	0V		
V 6	6CB6	0V	1.7VDC	6.2VAC	0V	125VDC	125VDC	0V		
V 7	6AL5	0V	-3VDC	6.3VAC	0V	-2.4VDC	0V	-.7VDC		
V 8	6AC7	0V	6.3VAC	2.2VDC	-2.4VDC	2.2VDC	165VDC	0V	160VDC	
V 9	12AU7	6.4VDC	0V	1.2VDC	0V	0V	360VDC	0V	20VDC	6.3VAC
V 10	6AU6	▲.6VDC	▲3.2VDC	▲0V	▲6.3VAC	▲200VDC	▲36VDC	▲3.2VDC		
V 11	6T8	▲-.3VDC	▲-.9VDC	▲-.3VDC	▲6.3VAC	▲0V	▲-1VDC	▲0V	▲-.7VDC	95VDC
V 12	6AQ5	▲-6.6VDC	▲0V	▲0V	▲6.3VAC	▲200VDC	▲205VDC	▲-6.6VDC		
V 13	6SN7GT	§-31VDC §-45VDC	100VDC 185VDC	0V	§-.2VDC	460VDC	5VDC 25VDC	0V	6.3VAC	
V 14	6J5	NOT USED IN ALL MODELS								
V 15	6AL5	0V	0V	0V	6.3VAC	4.8VDC	0V	-3.8VAC		
V 16	6SN7GT	§.8VDC	330VDC	13VDC	§-2.1VDC §-4.3VDC	160VDC	13VDC	0V	6.3VAC	
V 17	6BQ6GT	0V	6.3VAC	13VDC	175VDC	-7.1VDC	17VDC	0V	17VDC	Top Cap *
V 18	6W4GT	0V	0V	510VDC	0V	350VDC	130VDC	▲6.3VAC	▲0V	
V 19	1B3GT	* DO NOT MEASURE								
V 20	5U4GT	0V	410VDC	0V	380VAC	-3VDC	380VAC	0V	410VDC	
V 21	17BP4	6.3VAC	1.2VDC	PIN 10 350VDC	PIN 11 35VDC 140VDC	PIN 12 0V				

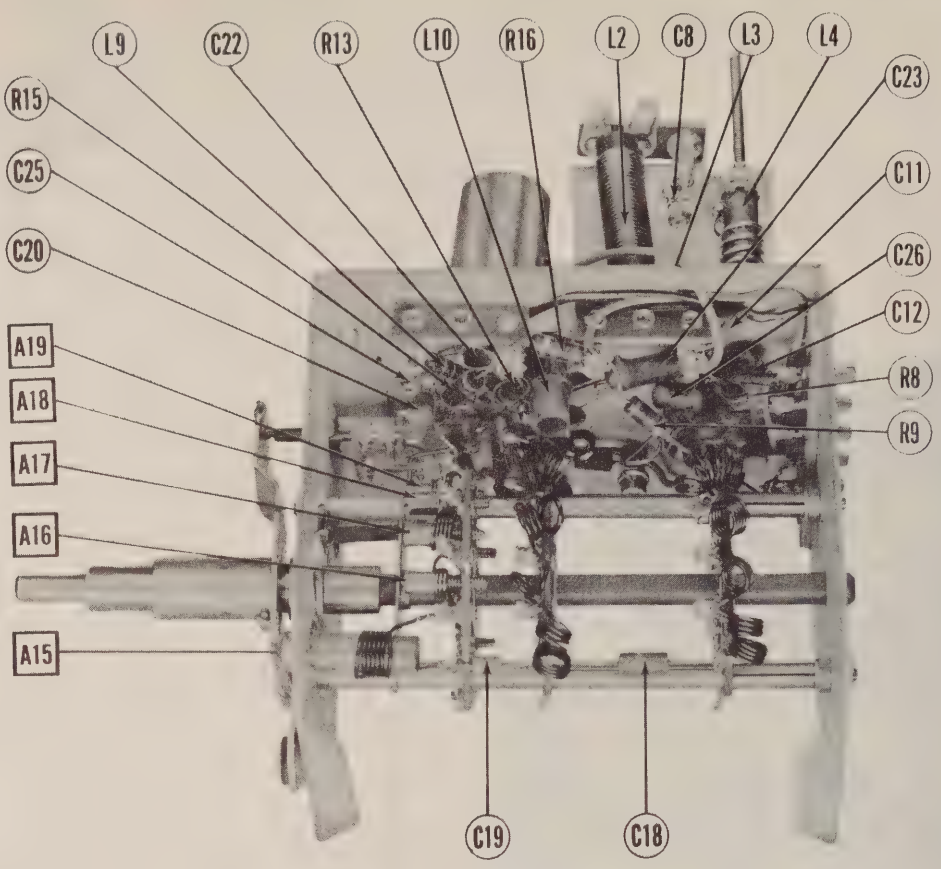
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
▲ MEASURED FROM PIN 2 OF V12
* DO NOT MEASURE
§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

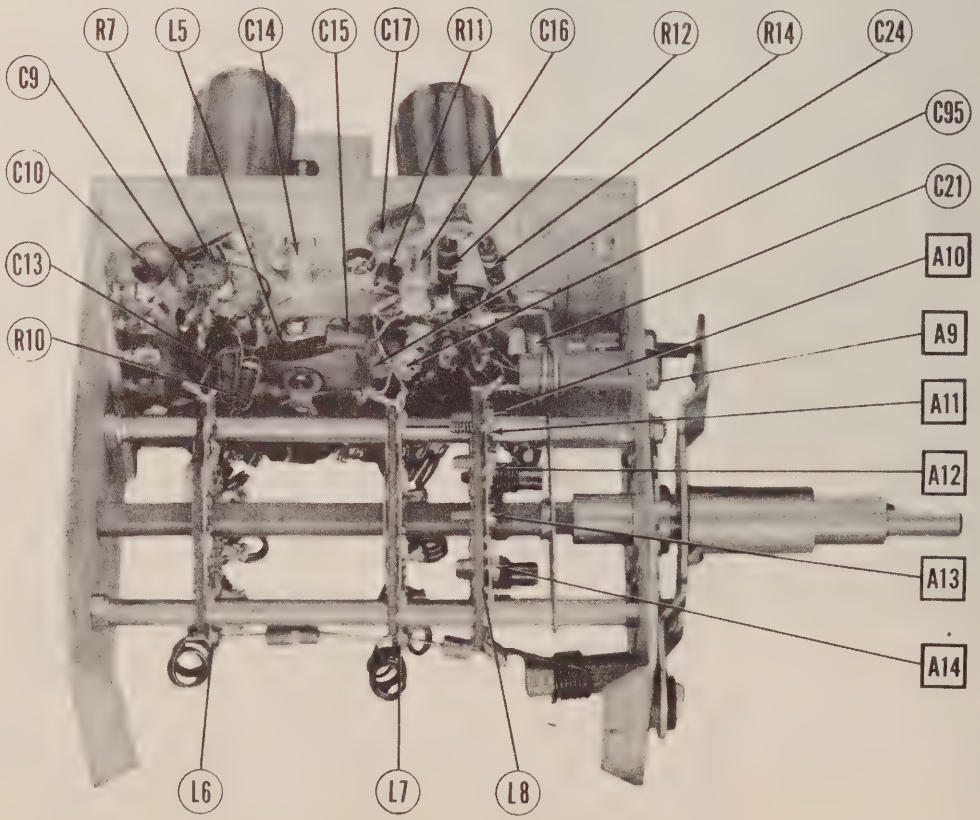
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	▲1KΩ	▲1KΩ	0Ω	.1Ω	1.8Meg	1.8Meg	47Ω		
V 2	6J6	▲5.7KΩ	▲11KΩ	.1Ω	0Ω	100KΩ	10KΩ	0Ω		
V 3	6J6	NOT USED IN ALL MODELS								
V 4	6AU6	1.7Meg	0Ω	.1Ω	0Ω	▲300Ω	▲300Ω	82Ω		
V 5	6CB6	1.7Meg	47Ω	.1Ω	0Ω	▲530Ω	▲530Ω	0Ω		
V 6	6CB6	.3Ω	180Ω	.1Ω	0Ω	▲430Ω	▲430Ω	0Ω		
V 7	6AL5	0Ω	¶1KΩ	.1Ω	0Ω	¶9.2KΩ	0Ω	680KΩ		
V 8	6AC7	0Ω	.1Ω	750Ω	¶9.3KΩ	750Ω	†11KΩ	0Ω	†16KΩ	
V 9	12AU7	47KΩ	0Ω	270KΩ	0Ω	0Ω	#30KΩ	1Meg	3.9KΩ	.1Ω
V 10	6AU6	▲470KΩ	▲1KΩ	▲0Ω	▲.1Ω	†1KΩ	▲23KΩ	▲1KΩ		
V 11	6T8	Inf.	▲39KΩ	Inf.	▲.1Ω	▲0Ω	Inf.	▲0Ω	1Meg	■330KΩ
V 12	6AQ5	280KΩ	▲0Ω	▲0Ω	▲.1Ω	■ 1.6KΩ	†0Ω	280KΩ		
V 13	6SN7GT	2.1Meg 1.1Meg	#3.3Meg #840KΩ	0Ω	2.2Meg	#4.3KΩ	5.3KΩ 330Ω	0Ω	.1Ω	
V 14	6J5	NOT USED IN ALL MODELS								
V 15	6AL5	1KΩ	1KΩ	0Ω	.1Ω	4.8Meg	0Ω	4.8Meg		
V 16	6SN7GT	5.1Meg	#28KΩ	1.8KΩ	118KΩ 68KΩ	#290KΩ	1.8KΩ	0Ω	.1Ω	
V 17	6BQ6GT	Inf.	.1Ω	0Ω	†12KΩ	680KΩ	5.6KΩ	0Ω	150Ω	Top Cap #68Ω
V 18	6W4GT	Inf.	Inf.	500KΩ	Inf.	†20Ω	22KΩ	▲.1Ω	▲0Ω	
V 19	1B3GT	PINS 1 THRU 8 HAVE INF. RESISTANCE								Top Cap #450Ω
V 20	5U4G	Inf.	20KΩ	Inf.	¶65Ω	15Ω	¶65Ω	Inf.	20KΩ	
V 21	17BP4	.1Ω	270KΩ	PIN 10 †0Ω	PIN 11 100KΩ 33KΩ	PIN 12 0Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM 350 VDC LINE
# MEASURED FROM PIN 3 OF V18
▲ MEASURED FROM PIN 2 OF V12
■ MEASURED FROM PIN 8 OF V20
¶ MEASURED FROM -3 VDC LINE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

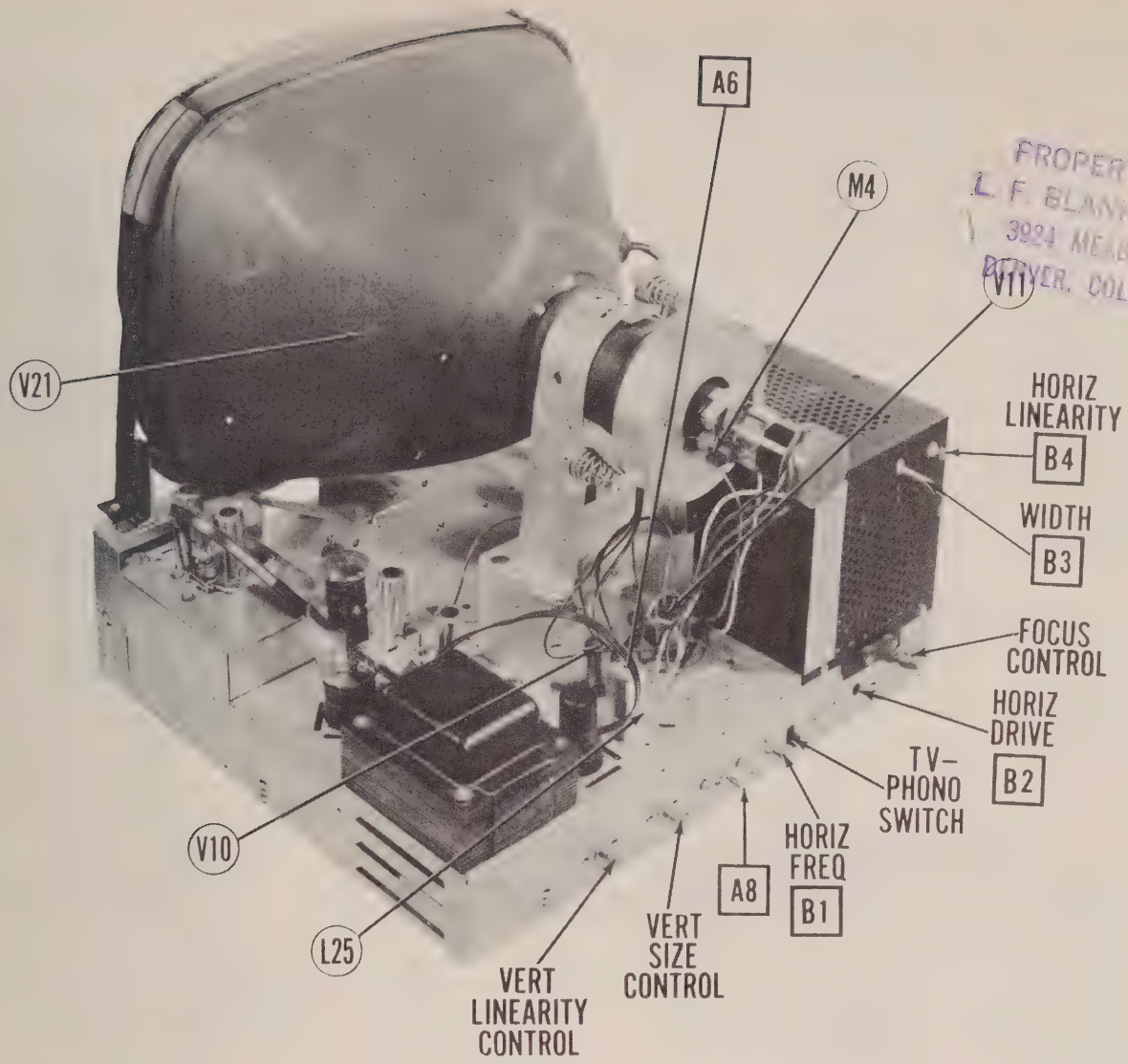


2 TUBE RF TUNER-RIGHT SIDE



2 TUBE RF TUNER-LEFT SIDE

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CHASSIS – TOP VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern, and turn the horizontal hold control to the mid position of its range. Adjust the horizontal frequency slug, (B1), to the center of the range over which the picture synchronizes horizontally. The picture should remain in synchronization over at least 1/4 rotation of the hold control.

Adjust the horizontal drive trimmer, (B2), counter-clockwise as far as possible without crowding or vertical lines appearing in the picture.

Adjust the width slug, (B3), until the picture is slightly wider than necessary to fill the mask.

Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right. Slight readjustment of B2 may be necessary to obtain optimum results.

FM TRAP ADJUSTMENT

If interference from a FM station is encountered, A32 may be adjusted to eliminate, or minimize, the interference. A32 requires no adjustment if no interference is present.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HYDE PARK PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6J6	6J6	7BF	
B	RF Amplifier	6BH6	6BH6	7CM	
V2A	Converter	6J6	6J6	7BF	
B	Converter	6AG5	6AG5	7BD	
C	Mixer	6BC5	6BC5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF Amp.	6AU6	6AU6	7BK	
V5A	2nd Video IF Amp.	6CB6	6CB6	6CK	
B	2nd Video IF Amp.	6AU6	6AU6	7BK	
V6A	3rd Video IF Amp.	6CB6	6CB6	6CK	
B	3rd Video IF Amp.	6AU6	6AU6	7BK	
V7	Video Detector - AGC Rectifier	6AL5	6AL5	6BT	
V8	Video Amplifier	6AC7	6AC7	8N	
V9	DC Restorer-Sync Seperator	12AU7	12AU7	9A	
V10	Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Detector - AF Amplifier	6T8	6T8	9E	
V12	Audio Output	6AQ5	6AQ5	7BZ	
V13	Vert. Oscillator - Vertical Amp.	6SN7GT	6SN7GT	8BD	
V14	Vertical Amp.	6J5	6J5	6Q	
V15	Horiz. Phase Det.	6AL5	6AL5	6BT	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: HYDE PARK PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V21A	17BP4	17BP4A ①	12D	① Outer coating must be grounded.
B	16RP4	16RP4	12D	
C	16TP4	16TP4	12D	
D	19BP4		12D	
E	19AP4A	19AP4A	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HYDE PARK PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	CEM-5	AFH 3-31		UP44445		TVL-3787	▲ Filter
B	40	450							■ Filter
C	40	450							▲ Filter
C2A	500	5	CEM-7	AF180T10D		UPT5015		TVL-1415	■ Bias Filter
B	50	150				BRH805		TVA-1702	▲ Audio Output Cathode
C3	40	450	CET-4	PRS450/40		BR4045A		TVA-1712	Audio Output Dec.
C4A	20	450	CEM-6	AFH422J2D		UPT2111 45		TVL-4766	▲ Decoupling
B	10	450							■ Vert. Amp. Decoupling
C	10	450							▲ Decoupling
D	10	150							Video Amp. Screen
C5	100	25	CET-5	PRS25/100		BRH251A		TVA-1207	Horiz. Output Cathode
C6	100	25	CET-5	PRS25/100		BRH251A		TVA-120	Vert. Amp. Cathode
C7	1	25	CET-6	E26E42		BR145		TVA-1300	Stabilizing Cap.
C8	10		SIlONPO		TCZ-10		NPOK-100	5TCC-Q1	Fixed Trimmer
C9	470			SI470	D6-471		GP2K-471	5GA-T47	RF Coupling
C10	1500			BPD-0015	DD-152		801-0015	5HK-D15	RF Amp. Grid
C11	1500			BPD-0015	DD-152		801-0015	5HK-D15	AGC Filter
C12	1500			BPD-0015	DD-152		801-0015	5HK-D15	RF Amp. Filter
C13	270			SI270	D6-271		GP2K-271	5GA-T27	RF Amp. Decoupling
C14	.5-3				829-3				Variable Trimmer
C15	1				TCZ-1		NPOK-010		RF Coupling
C16	1-6				829-7				Variable Trimmer
C17	270			SI270	D6-271		GP2K-271	5GA-T27	RF Bypass
C18	.5				TCZ-.5		NPOK-0R5		RF Coupling
C19	2.2				TCZ-2.2		NPOK-2R2		Osc. Coupling
C20	39			SI39	D6-390		GP1K-390		Osc. Feedback
C21	2.2				TCZ-2.2		NP0K-2R2		Fixed Trimmer
C22	270			SI270	D6-271		GP2K-271	5GA-T27	Decoupling
C23	1500			SIL500	D6-152		GP2L-152	5HK-D15	RF Bypass
C24	1500			BPD-0015	DD-152		801-0015	5HK-D15	Conv. Filter
C25	10			SIlONPO	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C26	270			SI270	D6-271		GP2K-271	5GA-T27	IF Coupling
C27	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	1st Video IF Dec. ¶
C28	2000		CC-22	BPD-002	DD-202	1W5D2	801-002	5HK-D2	1st Video IF Filter ¶
C29	100	500	CC-31	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	IF Coupling
C30	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter ¶
C31	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	2nd Video IF Dec. ¶
C32	1500			BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd Video IF Filter ¶
C33	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	3rd Video IF Dec.
C34	1500			BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	3rd Video IF Filter ¶
C35	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	3rd Video IF Calhode ¶
C36	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Bypass ¶
C37	100		CC-31	SI100	D6-101	5W5T5	GP1K-101	5GA-T1	RF Bypass *
C38	120		CC-312	SI120	D6-121	5R5T15	GP2K-121	5GA-T12	AGC Filter
C39	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	AGC Filter
C40	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Bias Filter ¶
C41	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	Bias Filter
C42	.01	600	CP-6-11	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	AGC Decoupling
C43	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-01	AGC Decoupling *
C44	2000		CC-22	BPD-002	DD-202	1W5D2	801-002	5HK-D2	Video Det. Filter *

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HYDE PARK PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C45	5		CC-55	SI5		5W5V5	GP1K-050		Video Diode Filter
C46	680		CC-368	SI680	D6-681	2R5T7	GP2K-681	5GA-T68	Video Amp. Cathode
C47	470		CC-347	SI470	D6-471	5R5T5	GP2K-471	5GA-T47	Video Amp. Cathode
C48	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C49	22	500	CM-422	1468-000025	D6-220	5R5G25	GP1K-220	1FM-42	DC Rest. Plate
C50	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	Picture Tube Cathode
C51	39	500	CC-439	1468-00004	D6-390	5W5Q4	GP1K-390	1FM-44	Sound IF Coupling
C52	.02	600	CPM-6-12	P688-02	DF-203	PTE6S2		6TM-S2	Sound IF Cathode
C53	.022	1000		P1088-022		PTE16S25		MB-S22	Sound IF Plate †
C54	.005	600	CP-6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Sound IF Screen
C55	.001	600	CP-6-21	P688-001	D6-101	PTE6D1	GP2L-101	6TM-D1	Diode Load Cap.
C56	.002	600	CP-6-22	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	De-Emphasis
C57	.005	600	CP6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C58	.01	600	CP-6-11	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C59	.005	600	CP-6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C60	.02	600	CPM-6-12	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C61	.05	600	CP-6-15	P688-05	DF-503	PTE6S5		6TM-S5	Audio Output Grid
C62	.005	600	CP-6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C63	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Bypass *
C64	.01	600	CP-6-11	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Sync. Coupling
C65	.002	600	CP-6-22	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Integrator Net.
C66	.005	600	CP-6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Integrator Net.
C67	.005	600	CP-6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Integrator Net.
C68	4700	800		1464-005	D6-472	1DR5D5	GP2-333-472	1FM-24	Vert. Sync. Coupling †
C69	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Discharge
C70	.25	400	CP-4-025	P488-25		GT4P25		4TM-P25	Vert. Sweep Coupling
C71	.001	600	CP-6-21	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sync. Coupling
C72	.001	600	CP-6-21	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sync. Coupling
C73	.01	600	CP-6-11	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Integrator Net.
C74	.005	600	CP-6-25	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	AFC Filter
C75	.05	600	CP-6-15	P688-05	DF-503	PTE6S5		6TM-S5	AFC Filter
C76	3900	500	CM-239	1464-004	D6-402	1DR5D4	GP2-333-402	MS-24	Fixed Trimmer
C77	330	800	CM-333A	1469HV-00035					Horiz. MV Feedback
C78	220	1000	CM-332A	1469HV-00025					Horiz. Discharge
C79	820	500	CM-382	1464-0008		2R5T8		MS-38	Horiz. Sweep Coupling
C80	270	500	CM-327	1469-0003	D6-271	5R5T3	GP2K-271	1FM-325	Horiz. Output Screen
C81	.05	600	CP-6-15	P688-05	DF-503	PTE6S5		6TM-S5	Horiz. Output Screen
C82	.025	800	CP-6-125	P688-025		PTE16S25			Damper Filter
C83	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	Damper Filter
C84	.25	400	CP-4-025	P488-25		GT4P25		4TM-P25	Horiz. Sweep Coupling
C85	10	1500	CM-410A	1469HV-00001					Horiz. Feedback
C86	10	1500	CM-410A	1469HV-00001					Horiz. Feedback
C87	33	800							Fixed Trimmer *
C88	33	800							Fixed Trimmer *
C89	33	800							Fixed Trimmer *
C90	500	20000	CHV-35-15	HV20C	TV3-502				HV Filter
C91	.022	600		P688-022		PTE6S2		6TM-S22	Line Filter †
C92	.002	800	CP-6-22	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	AGC Filter *
C93	100	500		1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	IF Coupling *
C94	100	500		1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	IF Coupling *
C95	10			SIlONPO	TCZ-10		NPOK-100	5TCC-Q1	Osc. Coupling
C96	.1	600	CP-6-01	P688-1	DF-104	PTE6P1		6TM-P1	Fixed Trimmer *

* Not used in all models.
† Some models use .02MFD 600V in this application. (Mfgrs. part No. CP-6-12)
‡ Some models use .005MFD 600V in this application. (Mfgrs. part No. CP-6-25)
¶ Some models use 2000MMF in this application. (Mfgrs. part No. CC-22)

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HYDE PARK PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	P-7	Q13-133	AG-60-Z	B-60-S	Volume Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R1A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A per instructions
R2A	1Meg	½		Concentrikit			
B	500KΩ	½	PD-5	B11-137 ∮	RTV-146	SBB-584	Vert. Hold Control - Front
C	Shaft end			B11-123 ∮			Horiz. Hold Control - Rear
R3A	750Ω	2	PD-4	E-187 ∮	RTV-145		Attach per instructions in Concentrikit
B	100KΩ	½					Contrast Control - Wire Wound - Front
R4A	5000Ω	½	P-2	Q11-114	AM-19-S	AN-10	Brightness Control - Rear
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Vert. Linearity Control
R5A	2.5Meg	½	P-5	Q11-239	AM-84-S	AN-83	Attach to R4A per instructions
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Height Control
R6	1500Ω	4	P-6		RTV-6	SVP-994	Attach to R5A per instructions
							Focus Control - Wire Wound

∮ Additional parts to be used with Concentrikit.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HYDE PARK PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	47Ω 20%	½			Parasitic Suppressor
R8	150KΩ 20%	½			RF Amp. Grid
R9	1000Ω	½		BTS-1000	RF Amp. Decoupling
R10	4700Ω 20%	½		BTS-4700	RF Coil Shunt
R11	100KΩ 20%	½		BTS-100K	Series Test Point
R12	100KΩ 20%	½			Mixer Grid
R13	10KΩ	½			Mixer Plate
R14	10KΩ	½			Osc. Grid
R15	4700Ω 20%	½		BTS-4700	Osc. Plate
R16	1000Ω	½		BTS-1000	Decoupling
R17	330Ω 20%	½	RC-331-2	BTS-330	AGC Network
R18	8200Ω	½	RC-822-2	BTS-8200	1st. Video IF Amp. Grid - See Note 2
R19	82Ω	½	RC-820-2	BTS-82	1st. Video IF Amp. Cathode
R20	100Ω	½	RC-101-2	BTS-100	1st. Video IF Amp. Decoupling
R21	8200Ω	½	RC-822-2	BTS-8200	2nd. Video IF Amp. Grid
R22	47Ω 20%	½	RC-470-2		2nd. Video IF Amp. Cathode - See Note 3
R23	330Ω 20%	½	RC-331-2	BTS-330	2nd. Video IF Amp. Decoupling
R24	100Ω	½	RC-101-2	BTS-100	Decoupling
R25	6800Ω	½	RC-682-2		3rd. Video IF Transformer Shunt - See Note 7
R26	180Ω 20%	½	RC-181-2	BTS-180	3rd. Video IF Amp. Cathode
R27	330Ω	½	RC-331-2	BTS-330	3rd. Video IF Amp. Decoupling
R28	22KΩ 20%	½	RC-223-2		4th. Video IF Transformer Shunt
R29	100Ω	½	RC-101-2	BTS-100	Decoupling
R30	39KΩ	1	RC-393-5	BTA-39K	Voltage Divider

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HYDE PARK PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R31	680KΩ	½	RC-684-2	BTS-680K	AGC Load
R32	1Meg	½	RC-105-2	BTS-1Meg	AGC Network
R33	1000Ω	½	RC-102-2	BTS-1000	Bias Network
R34	8200Ω	½	RC-822-2	BTS-8200	Video Det. Diode Load
R35	120Ω	½	RC-121-2		Parasitic Suppressor
R36	44KΩ	2	RC-443-8		Video Amp. Screen
R37	44KΩ	2	RC-443-8		Video Amp. Screen
R38	54KΩ	2	RC-543-8		Video Amp. Plate
R39	54KΩ	2	RC-543-8		Video Amp. Plate
R40	5600Ω	1	RC-562-5	BTA-5600	Decoupling
R41	22KΩ 20%	1	RC-223-5	BTA-22K	Voltage Divider
R42	270KΩ	½	RC-274-2	BTS-270K	DC Restorer Load
R43	220KΩ	½	RC-224-2	BTS-220K	Voltage Divider
R44	2200Ω	½	RC-222-2	BTS-2200	Picture Tube Grid
R45	33KΩ	½	RC-333-2	BTS-33K	Picture Tube Cathode
R46	470KΩ	½	RC-474-2	BTS-470K	Sound IF Amp. Grid
R47	1000Ω	½	RC-103-2	BTS-1000	Sound IF Amp. Cathode
R48	100KΩ 20%	½	RC-104-2	BTS-100K	Sound IF Amp. Screen
R49	1000Ω	½	RC-102-2	BTS-1000	Sound IF Amp. Decoupling
R50	22KΩ	½	RC-223-2	BTS-22K	Voltage Divider
R51	39KΩ	½	RC-393-2	BTS-39K	Ratio Det. Diode Load - See Note 4
R52	15KΩ	½	RC-153-2	BTS-15K	De-emphasis
R53	2.7Meg	1	RC-275-5	BTA-2.7Meg	Phono Input Shunt
R54	470KΩ	½	RC-474-2	BTS-470K	AF Amp. Grid
R55	330KΩ	½	RC-334-2	BTS-330K	AFAmp. Plate
R56	100KΩ	½	RC-104-2	BTS-100K	Output Grid
R57	330KΩ 5%	½	RC-334-3	BTS-330K-5%	Bias Network
R58	180KΩ 5%	½	RC-184-3	BTS-180K-5%	Bias Network
R59	470KΩ	½	RC-474-2	BTS-470K	Voltage Divider
R60	470KΩ	½	RC-474-2	BTS-470K	Voltage Divider
R61	390Ω	1	RC-391-5	BTA-390	Decoupling
R62	820KΩ	½	RC-824-2	BTS-820K	Sync. Sep. Plate
R63	47KΩ	½	RC-473-2	BTS-47K	Voltage Divider
R64	1Meg	½	RC-105-2	BTS-1Meg	Sync. Amp. - Phase Inv. Grid
R65	3900Ω 20%	½	RC-392-2	BTS-3900	Sync. Amp. - Phase Inv. Cathode
R66	3900Ω	½	RC-392-2	BTS-3900	Sync. Amp. - Phase Inv. Plate
R67	3900Ω 20%	½	RC-392-2	BTS-3900	Sync. Amp. - Phase Inv. Plate
R68	22KΩ	½	RC-223-2	BTS-22K	Integrator
R69	8200Ω	½	RC-822-2	BTS-8200	Integrator
R70	8200Ω	½	RC-822-2	BTS-8200	Integrator
R71	1Meg	½	RC-105-2	BTS-1Meg	Vert. Osc. Grid
R72	820KΩ	½	RC-824-2	BTS-820K	Vert. Osc. Plate
R73	2.2Meg	½	RC-225-2	BTS-2.2Meg	Vert. Amp. Grid
R74	330Ω	2	RC-331-2	BTS-330	Vert. Amp. Cathode
R75	3800Ω	2			Vert. Amp. Decoupling - See Note 6
R76	3900Ω	½	RC-392-2	BTS-3900	Vert. Peaking
R77	6.8Meg	½	RC-685-2	BTS-6.8Meg	Vert. Feedback
R78	22KΩ	1	RC-223-5	BTA-22K	Decoupling
R79	100KΩ	½	RC-104-2	BTS-100K	Horiz. Phase Det. Diode Load
R80	100KΩ	½	RC-104-2	BTS-100K	Horiz. Phase Det. Diode Load
R81	4.7Meg	½	RC-475-2	BTS-4.7Meg	Horiz. Phase Det. Diode Load
R82	27KΩ	½	RC-273-2	BTS-27K	Horiz. Phase Det. Diode Load
R83	470KΩ	½	RC-474-2	BTS-470K	Horiz. AFC Filter
R84	1800Ω	½	RC-182-2	BTS-1800	Horiz. MV Cathode
R85	5600Ω	½	RC-562-2	BTS-5600	Horiz. MV Plate
R86	68KΩ	½	RC-683-2	BTS-68K	Horiz. MV Grid
R87	270KΩ	½	RC-274-2	BTS-270K	Horiz. MV Plate
R88	22KΩ	1	RC-223-5	BTA-22K	Horiz. MV Decoupling
R89	5600Ω	½	RC-562-2	BTS-5600	Horiz. Peaking
R90	68Ω	½	RC-680-2		Parasitic Suppressor
R91	680KΩ	½	RC-684-2	BTS-680K	Horiz. Output Grid
R92	33Ω	1		BW-1-33	Horiz. Output Cathode
R93	120Ω	2	RC-121-8	BW-2-102	Horiz. Output Cathode
R94	12KΩ	5	RW-123-11	1 3/4A-12K	Horiz. Output Screen
R95	18KΩ	2	RC-183-8	BTB-18K	Horiz. Feedback
R96	3.3Ω	½	RC-336-2		HV Rectifier Filament
R97	680KΩ	2	RC-684-8		HV Filter
R98	750Ω	2	RC-751-8		Focus Coil Shunt - See Notes 5 and 6
R99	15Ω	1	RC-150-5	BW-1-15	Bias Network
R100	100KΩ	2	RC-104-8	BTB-100K	Isolation
R101	100KΩ	1	RC-104-2	BTS-100K	Voltage Divider
R102	1200Ω	2	RC-122-8	BTB-1200	Focus Coil Shunt - See Note 1

Note 1 Not used in all models.
Note 2 Some models use 10KΩ resistor in this application.
Note 3 Some models use 82Ω resistor in this application.
Note 4 Some models use 44KΩ resistor in this application.
Note 5 Some models use 100Ω resistor in this application.
Note 6 Some models use parallel resistors in this application to obtain desired value.
Note 7 Some models use 8200Ω resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: HYDE PARK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ① 1.85A	780VCT .200ADC	5VAC ③3A	6.3VAC ②2.5A SEC. 3 6.3VAC ②5.6A	T-106	PM8412 P-5014 ②	P-3067	PV-200 and F-633 ③

② Mount separately and use for SEC. 3.
③ New mounting holes.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA HYDE PARK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	NOTES
T2	170Ω	970Ω	T-104	A-8111 ①	A-3000	TB0-3①	Vert. Block Osc. Trans.
T3	425Ω	23Ω	T-111		HV0-6		Horiz. Output Trans.
	Tap 40Ω	Tap 17.5Ω					
		SEC. 2					
		0Ω					
T4	670Ω	6Ω	T-112	A-8112 ①	A-3038 ①	TS0-5 ①	Vert. Output Trans.
T5A	19Ω		DY-6	DY-7	MDF-70		Horiz. Deflection Coils.
B	64Ω						Vert. Deflection Coils.
T6	350Ω				MF-2		Focus Coil

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA HYDE PARK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	INSTALLATION NOTES
T7	5.6KΩ	3.2Ω	420Ω	.72Ω	T-102	A-3878	A-2930	R0-9 ①	① Drill one new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA HYDE PARK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	INSTALLATION NOTES
L1	.200A	64Ω	4HΩ	LC-3	C-2325 ①	C-2991 ①	TR4200①	① Drill one new mounting hole.

COILS (RF-IF)

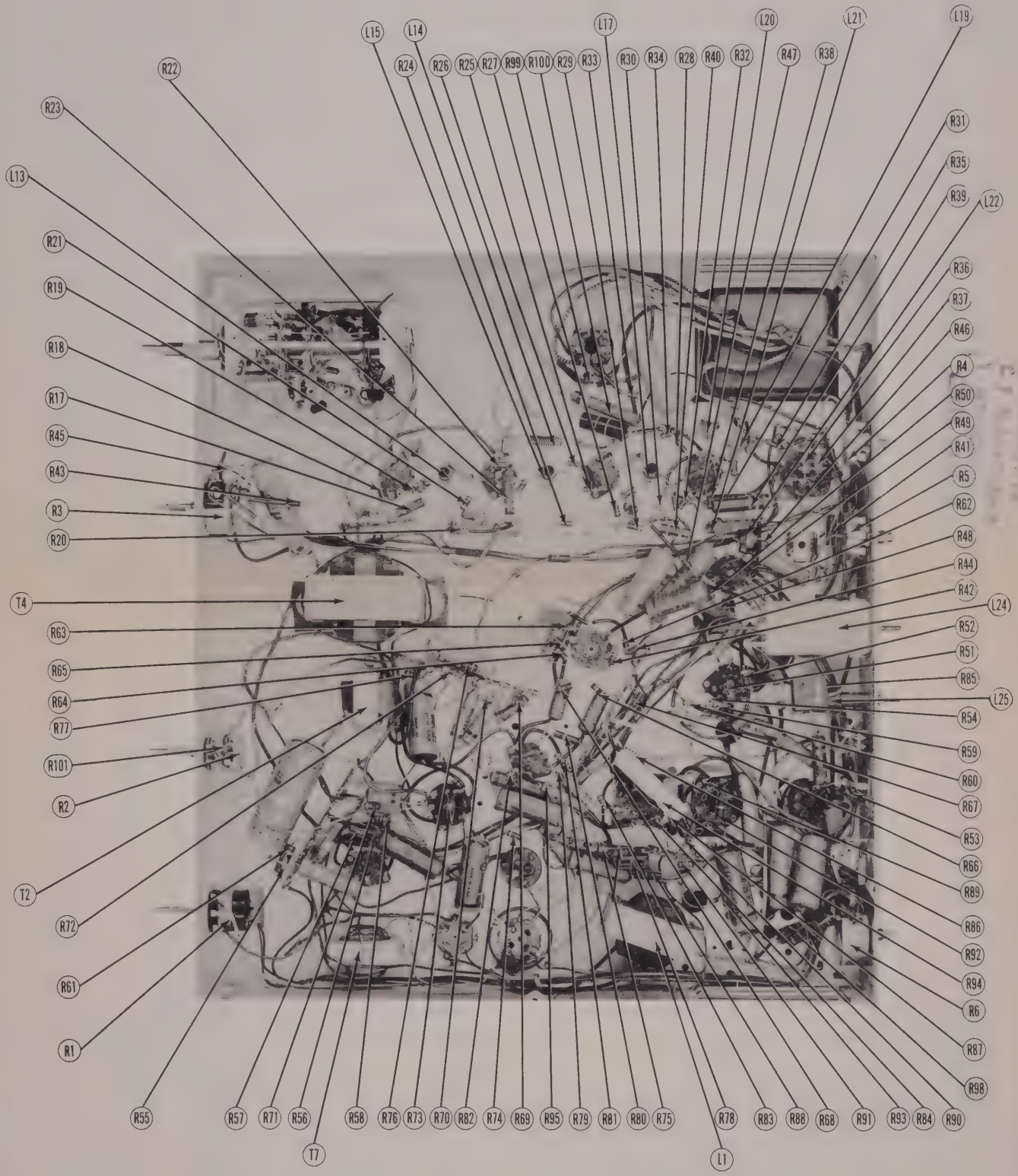
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA HYDE PARK PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA IRC PART No.	NOTES
L2	Ant. Trans.	1.3Ω	1.3Ω				
L3	RF Choke	.59Ω				CLA	.82 Microhenry
L4	Ant. Coil	0Ω					
L5	Fil. Choke	0Ω					
L6	RF Coils	0Ω					
L7	Mixer Grid Coils	0Ω					
L8	Osc. Coils	0Ω					
L9	RF Choke	0Ω					
L10	1st Video IF	.6Ω					
L11	Fil. Choke	0Ω		LC-1			Not used in all models.
L12	Fil. Choke	0Ω		LC-1			Not used in all models.
L13	2nd Video IF	.2Ω		LV-6			
L14	Fil. Choke	0Ω		LC-1			
L15	3rd Video IF	.3Ω	.3Ω				
L16 (A)	RF Choke			LC-4			Some models use L16 (A) and (B) in lieu of L15.
(B)	3rd Video IF	.2Ω		LV-6			
L17	4th Video IF	.3Ω	.3Ω				
L18 (A)	RF Choke			LC-4			Some models use L18 (A) and (B) in lieu of L17.
(B)	4th Video IF	.2Ω		LV-6			
L19	Peaking	6Ω		LP-5			Green Dot
L20	Peaking	11Ω		LP-6			Red Dot
L21	Peaking	12Ω		LP-8			Blue Dot
L22	Peaking	7Ω		LP-7			Coil wound on 13KΩ resistor (yellow dot).
L23	1st Sound IF	2.5Ω	2.5Ω	LTO-3			
L24	Disc. Trans.	6Ω	.6Ω	LRD-1			Tap .6Ω
L25	Horiz. Freq.	50Ω		LHO-2			
L26	Width Coil	29Ω	30Ω	L-M77J4-3			
L27	Horiz. Lin.	28Ω		L-M77J-4			

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA HYDE PARK PART No. FUSE	REPLACEMENT DATA HYDE PARK PART No. HOLDER	REPLACEMENT DATA LITTELFUSE PART No. FUSE	REPLACEMENT DATA LITTELFUSE PART No. HOLDER	REPLACEMENT DATA BUSS PART No. FUSE	REPLACEMENT DATA BUSS PART No. HOLDER	
M1	3AG Pigtail	.375A			318.375		GJV-3/8		

MISCELLANEOUS

ITEM No.	PART NAME	HYDE PARK PART No.	NOTES
M2A	RF Tuner	TT-6	
B	RF Tuner	TT-3	Used in some models
M3	Switch		TV-Phono
M4	Ion Trap	IT-1	
B2	Trimmer	CT-1	25-280 MFD (Horiz. Drive)



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PHOTOFACT* Folder

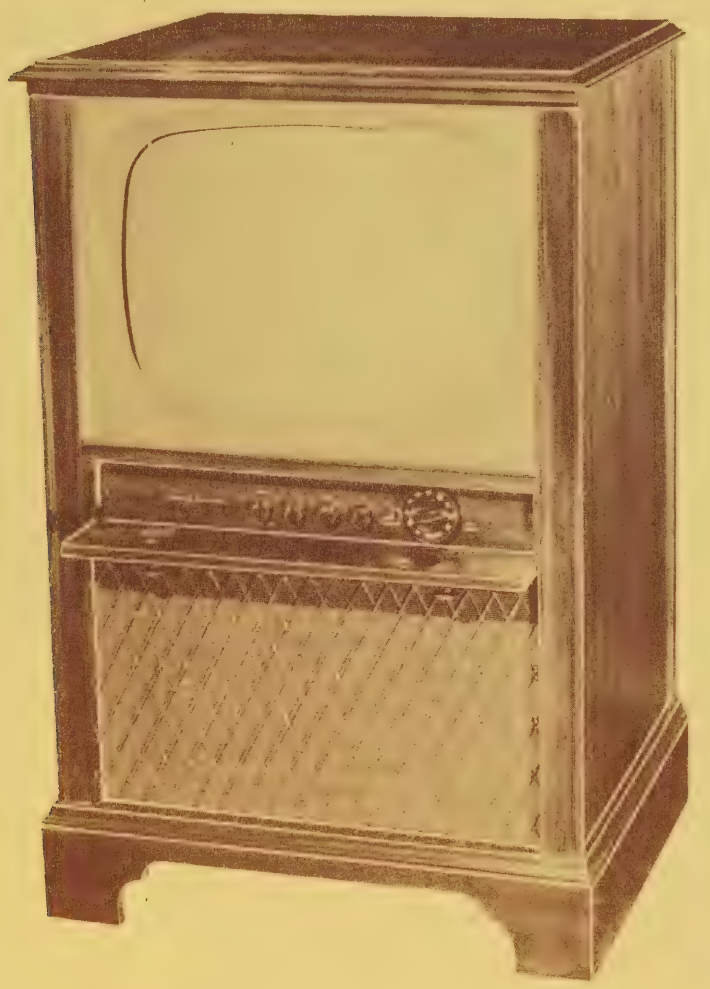
MAGNAVOX
CHASSIS CT331 thru CT349 (105 Series)

L. F. [illegible]
[illegible]
DENVER, COLORADO

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



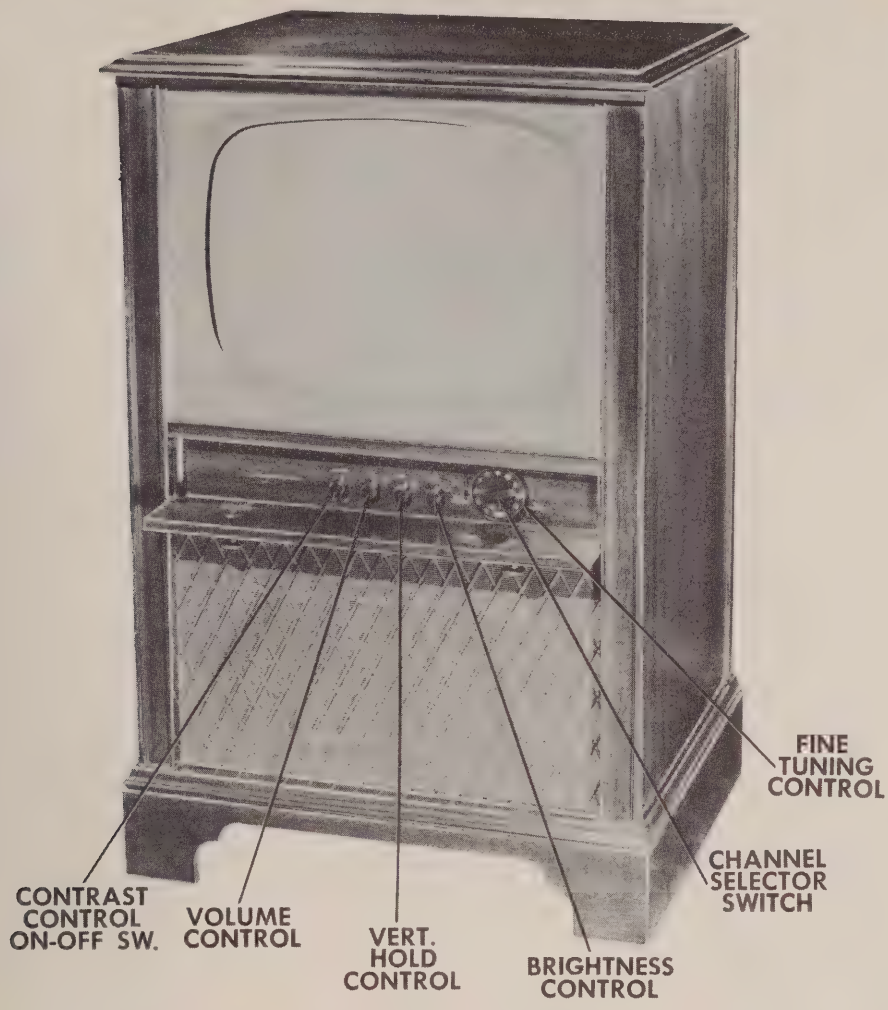
CHASSIS CT 331

MAGNAVOX
CHASSIS CT331 thru CT349 (105 Series)

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5-52 SET 168 FOLDER 10



Magnavox Chassis CT-331

TRADE NAME	Magnavox Chassis CT-331 thru CT-349 (105 Series)
MANUFACTURER	Magnavox Co., 2131 Bueter RD., Fort Wayne, Ind.
TYPE SET	TV Radio Combination (Some Chassis T.V. Only)
TUBES	Twenty-One

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.8 Amp. @ 117 Volts AC
TUNING RANGE—Channels 2 thru 13

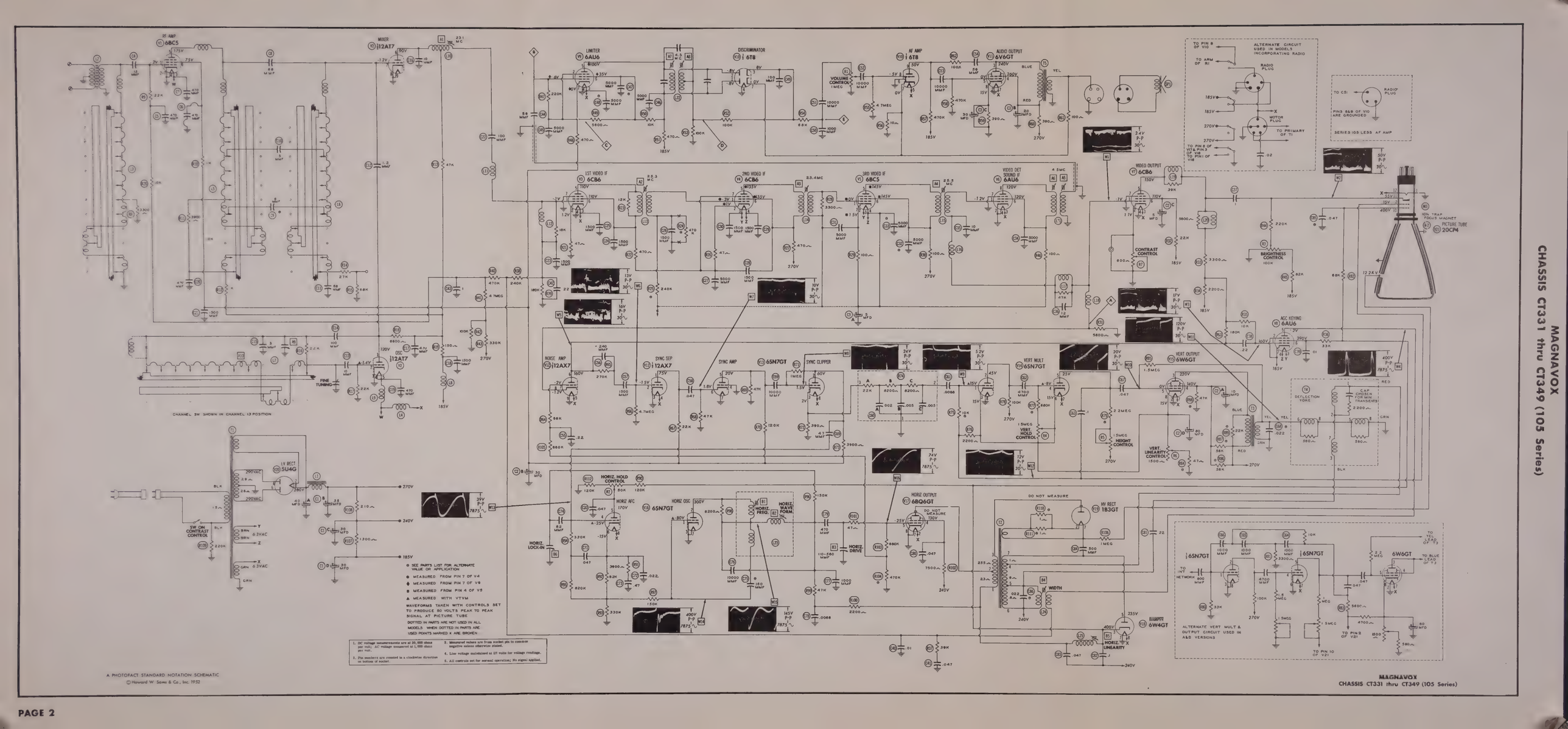
INDEX

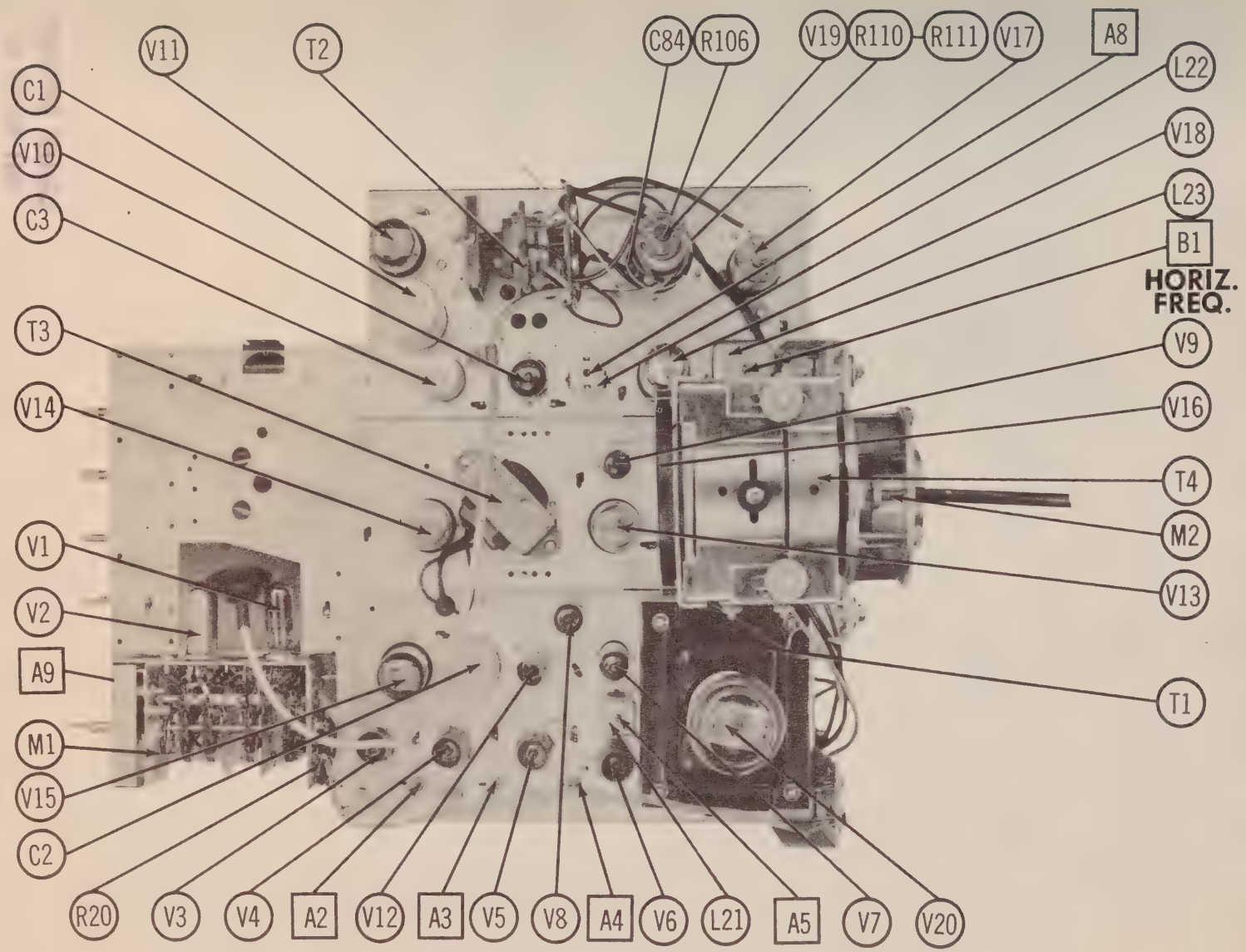
Alignment Instructions 6, 7
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13, 14
Photographs
Cabinet - Rear View 11
Capacitor & Alignment Identification 4, 9
Photos (cont.)
Chassis - Top View 3
RF Tuner 10
Resistor & Inductor Identification 15, 16
Resistance Measurements 8
Schematic 2
Tube Placement Charts 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

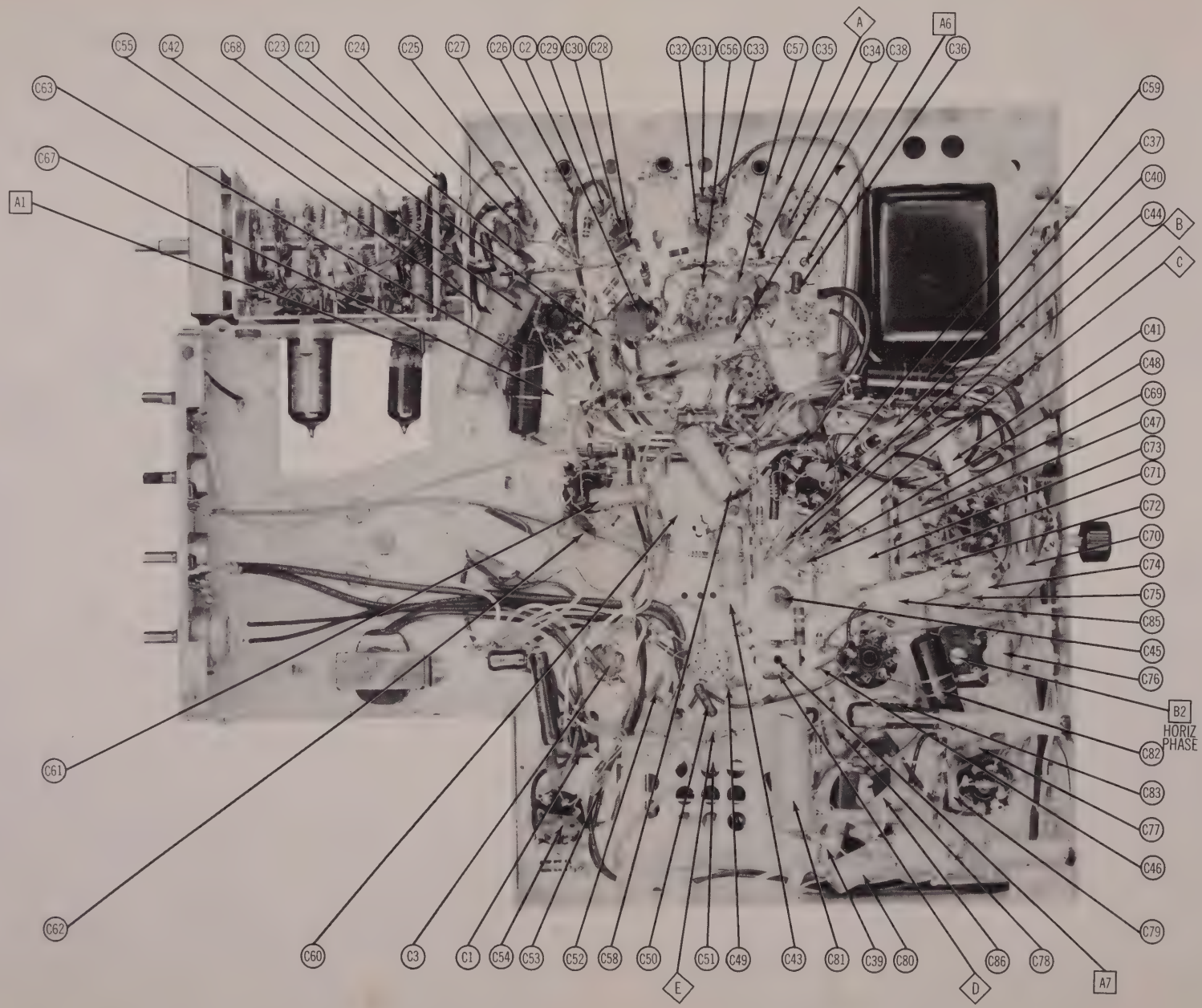
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

MAGNAVOX
CHASSIS CT331 thru CT349 (105 Series)


MAGNAVOX
CHASSIS CT331 thru CT349 (105 Series)
RF AMP V1 6BC5
MIXER V2 12AT7
OSC V3 12AT7
LIMITER V9 6AU6
DISCRIMINATOR
AF AMP V10 6T8
AUDIO OUTPUT V11 6V6GT
1ST VIDEO IF V7 6CB6
2ND VIDEO IF V8 6CB6
3RD VIDEO IF V5 6BC5
VIDEO DET SOUND IF V6 6AU6
VIDEO OUTPUT V7 6CB6
NOISE AMP V12 12AX7
SYNC SEP V12 12AX7
SYNC AMP V13 6SN7GT
SYNC CLIPPER
VERT MULT V14 6SN7GT
VERT OUTPUT V15 6W6GT
ACC KEYING V8 6AU6
HORIZ AFC V16 6SN7GT
HORIZ OSC
HORIZ OUTPUT V17 6BQ6GT
HV RECT V18 1B3GT
DAMPER V18 6W4GT
LV RECT V20 5U4G
PICTURE TUBE V21 20CP4
CONTRAST CONTROL
BRIGHTNESS CONTROL
VERT HOLD CONTROL
HEIGHT CONTROL
VERT LINEARITY CONTROL
HORIZ HOLD CONTROL
HORIZ LOCK-IN
HORIZ FREQ.
HORIZ WAVE FORM
HORIZ DRIVE
HORIZ LINEARITY
WIDTH
VOLUME CONTROL 1MEG
FINE TUNING
SW ON CONTRAST CONTROL
ALTERNATE CIRCUIT USED IN MODELS INCORPORATING RADIO
RADIO PLUG
MOTOR PLUG
TO PRIMARY OF T1
TO CB RADIO PLUG
PINS 8&9 OF V10 ARE GROUNDED
SERIES 105 LESS AF AMP
10% TRAP FOCUS MAGNET
CAP CHOSEN FOR MIN TRANSIENTS
DEFLECTION YOKE
ALTERNATE VERT MULT & OUTPUT CIRCUIT USED IN A&B VERSIONS
TO YEL LEAD OF T3
TO BLUE LEAD OF T3
TO INT NETWORK
TO PIN 2 OF V21
TO PIN 10 OF V21
CHANNEL SW SHOWN IN CHANNEL 13 POSITION
DO NOT MEASURE
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
MEASURED FROM PIN 7 OF V4
MEASURED FROM PIN 7 OF V8
MEASURED FROM PIN 4 OF V5
MEASURED WITH VTVM
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 80 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
1. DC voltage measurements are at 20,000 ohms per volt; AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; No signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1952
MAGNAVOX
CHASSIS CT331 thru CT349 (105 Series)



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TOP VIEW

BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage leads should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the AGC keying tube V8 from its socket.
Connect the negative lead of a 1.5V battery to the ungrounded end of C43 and the positive lead to chassis.
Tune to channel which causes no interference.
To check for interference turn the fine tuning control and if the VTVM reading changes switch to another channel.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over converter tube V2. Low side to chassis	23.1MC (unmod)	See instructions above	DC probe to point (A) Common to chassis	A1	Adjust for maximum deflection.
2.	"	"	25.3MC	"	"	A2	"
3.	"	"	23.4MC	"	"	A3	"
4.	"	"	25.5MC	"	"	A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Tune to channel which causes no interference.
To check for interference turn the fine tuning control and if the response curve changes switch to another channel.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to ungrounded tube shield floating over converter tube V2. Low side to chassis.	24MC (10MC Swp)	22.75MC 25.75MC	See instructions above.	Vertical amp. to point (A) Low side to chassis.		Check for response curve similar to fig. 1 If necessary retouch A1 through A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

During Step 6 the common lead of the VTVM is connected to a point approximately 80 Volts with respect to chassis. Avoid touching or grounding case of VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	4.5MC (Unmod.)	Any channel not used locally.	DC probe through 1Meg resistor to point (B) (C) Common to point	A5, A6	Adjust for maximum deflection. Attenuate signal generator to maintain deflection at 5 volts or less.
7.	.001MFD	High side to pin 1 (grid) of 6AU6 (V9). Low side to chassis.	"	"	DC probe through 1Meg resistor to point (D) Common to chassis	A7	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point (E) Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	.001MFD	High side to pin 1 (grid) of 6AU6 (V6) Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any channel not used locally.	Vertical amp. thru 47KΩ resistor to point (B) Low side to chassis.	A5, A6	Adjust for response curve of maximum amplitude and symmetry as in Fig. 2.
7.	"	High side to pin 1 (grid) of 6AU6 (V9). Low side to chassis.	"	"	"	Vert. amp. to point (E) Low side to chassis.	A8, A7	Adjust A8 so 4.5 MC occurs at center of crossover lines as per fig. 3. Adjust A7 for maximum amplitude and straightness of crossover lines with symmetrical peaks. Continue with Step 9.

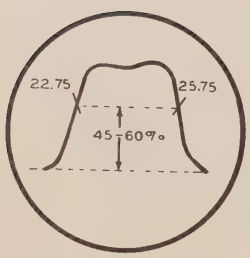


FIG. 1

FIG. 2

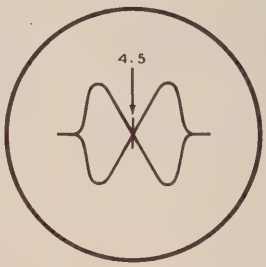


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Connect the high side of a signal generator, through a 2 or 3 MMF capacitor, to pin 1 of 1st. Video IF Amp.(V3.) Connect the low side to chassis.
Set the signal generator at 25.75 MC. This is used to provide a reference marker on the response curve.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across the antenna terminals with 120Ω in each lead.	213 MC (10MC Swp)	211.25MC	13	Vertical amp. to point (A) Low side to Chassis.	A9	Adjust A9 until video marker and reference marker coicide on response curve.
10.	"	"	207MC (10MC Swp)	205.25MC	12	"		Check all high band channels to see if marker coincidence can be obtained near the center of the range of the fine tuning control. If not make compromise adjustment of A9.
			201MC (10 MC Swp)	199.25MC	11			
			195MC (10MC Swp)	193.25MC	10			
			189MC (10MC Swp)	187.25MC	9			
			183MC (10MC Swp)	181.25MC	8			
			177 MC (10MC Swp)	175.25MC	7			
11.	"	"	85MC	83.25MC	6	"	A10	Expand or compress coil turns until video marker and reference marker coincide on on response curve.
12.	"	"	79MC	77.25MC	5	"		Check all low band channels to see if marker coicidence can be obtained near the center of the range of the fine tuning control. If not make compromise adjustment of A10.

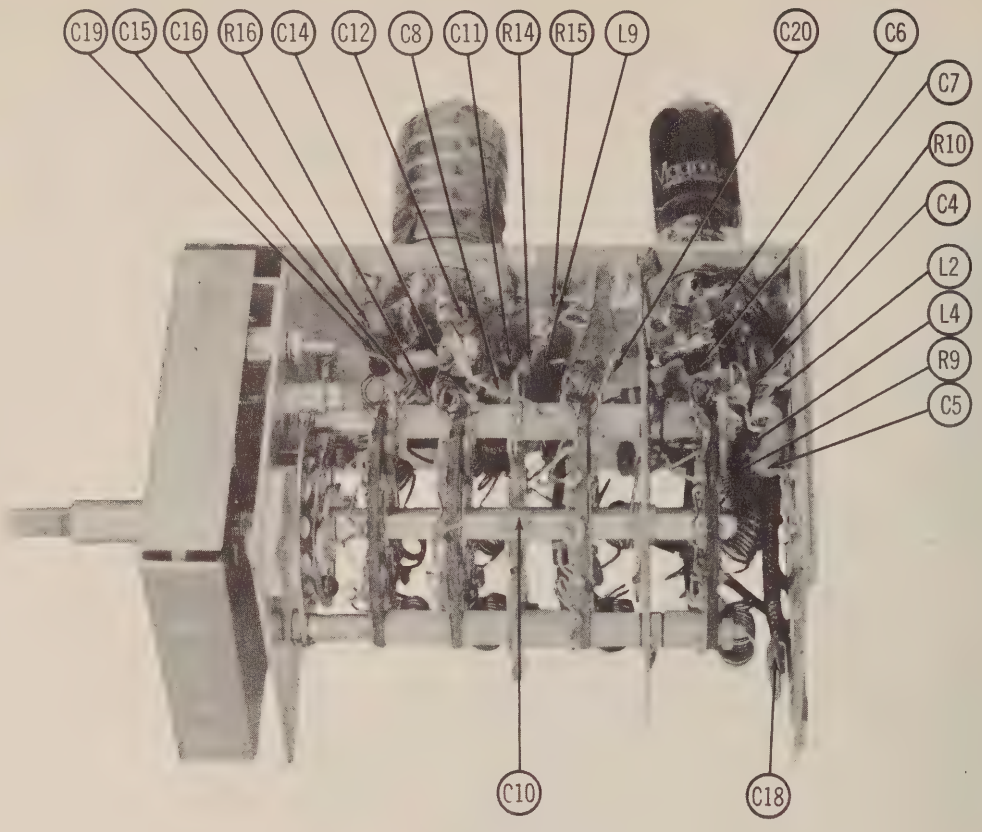
The RF and mixer portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

RESISTANCE MEASUREMENTS

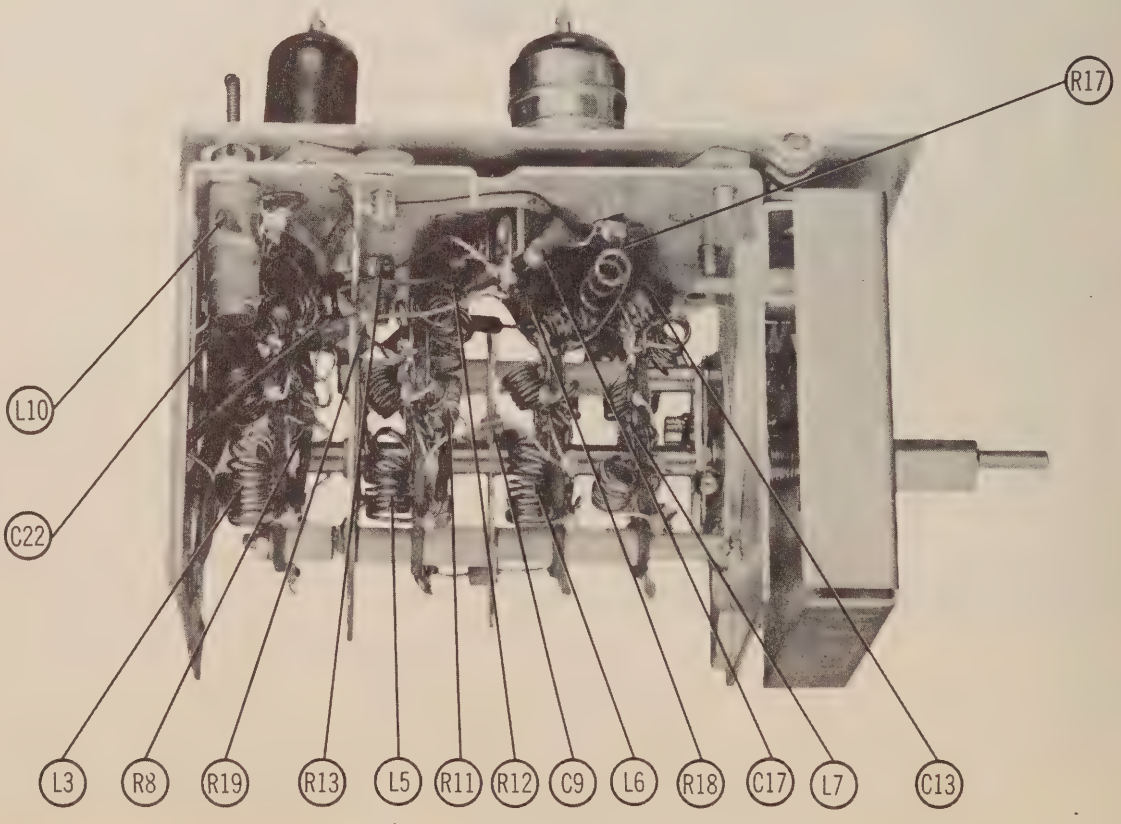
PROPERTY OF
L. F. BLANKENSHIP
2924 MEADE ST.
DENVER, COLORADO

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	600KΩ	0Ω	.3Ω	0Ω	†2.7KΩ	†18KΩ	0Ω		
V 2	12AT7	†8.5KΩ	22KΩ	0Ω	.6Ω	.6Ω	†48KΩ	95KΩ	0Ω	0Ω
V 3	6CB6	180KΩ	47Ω	.1Ω	0Ω	¶470Ω	¶470Ω	0Ω		
V 4	6CB6	170KΩ	¶47Ω	■.2Ω	■0Ω	†505Ω	†505Ω	¶0Ω		
V 5	6BC5	■.4Ω	■100Ω	■.2Ω	■0Ω	†135Ω	†135Ω	■100Ω		
V 6	6AU6	5.6KΩ	0Ω	.1Ω	0Ω	■100Ω	■100Ω	0Ω		
V 7	6CB6	5.6KΩ	110Ω	.1Ω	0Ω	†7KΩ	†23KΩ	0Ω		
V 8	6AU6	†14KΩ	†1.5KΩ	■.2Ω	■0Ω	420KΩ	#33KΩ	†1.5KΩ		
V 9	6AU6	†235KΩ	†16KΩ	.1Ω	0Ω	†2KΩ	†12KΩ	†16KΩ		
V 10	6T8	100KΩ	100K	200KΩ	0Ω	.1Ω	0Ω	10Ω	4.7Meg	†470KΩ
V 11	6V6GT	0Ω	0Ω	†1KΩ	†425Ω	470KΩ	†570KΩ	.1Ω	390Ω	
V 12	12AX7	†38KΩ	4.7Meg	0Ω	.1Ω	.1Ω	†180KΩ	1.1Meg	5.6KΩ	0Ω
V 13	6SN7GT	†1Meg	†20KΩ	390Ω	0Ω	40KΩ	47KΩ	0Ω	.1Ω	
V 14	6SN7GT	13KΩ	†100KΩ	300Ω	1Meg	†3Meg	300Ω	.1Ω	0Ω	
V 15	6W6GT	INF	0Ω	†700Ω	†18KΩ	1.5Meg	2.5KΩ	.1Ω	300Ω	
V 16	6SN7GT	480KΩ	49KΩ	0Ω	1.5Meg	130KΩ	410KΩ	0Ω	.1Ω	
V 17	6BQ6GT	470KΩ	.1Ω	1.1Meg	†7.7KΩ	1.1Meg	1.1Meg	0Ω	0Ω	TOP CAP #27Ω
V 18	6W4GT	#68KΩ	#120Ω	300KΩ	INF	†255Ω	INF	0Ω	.1Ω	
V 19	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #280Ω
V 20	5U4G	INF	30KΩ	INF	29Ω	INF	26Ω	INF	30KΩ	
V 21	20CP4A	0Ω	2.5KΩ	PIN 6 0Ω	PIN 10 #68KΩ	PIN 11 240KΩ	PIN 12 .1Ω			

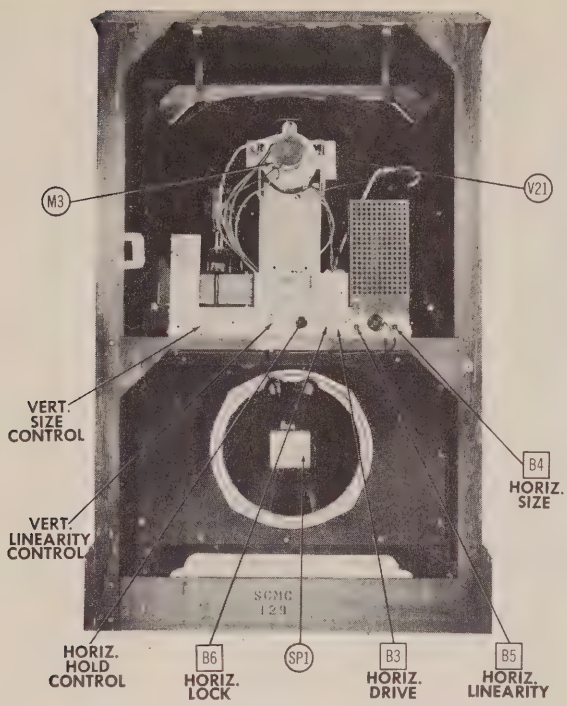
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 2 OF V20
# MEASURED FROM PIN 3 OF V18
■ MEASURED FROM PIN 4 OF V5
¶ MEASURED FROM PIN 7 OF V4



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL FREQUENCY ADJUSTMENTS

Short out terminals C and D of L23.

Pre-set the horizontal lock trimmer, (B6), one turn from full clockwise position, and the horizontal drive trimmer (B3) to 1½ turns from fully clockwise.

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to full clockwise position and adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally. Check the horizontal drive, width and linearity as outlined uner "HORIZONTAL DRIVE, WIDTH AND LINEARITY ADJUSTMENT" If proper frequency adjustment cannot be obtained, check the grid voltage on the noise inverter tube (Pin 7, V12). (Use VTVM). It should be between -9 and -13.5V and may be varied with the horizontal drive trimmer, B3.

HORIZONTAL WAVEFORM ADJUSTMENT

Remove the short from terminals C and D of L23.

Connect oscilloscope vertical amplifier through 15MMF capacitor to terminal C of L23. Adjust the horizontal waveform slug, B2, so that the rounded and sharp peaks of the curve are of equal amplitude as shown in Fig. 4. If necessary during adjustment of B2 adjust B1 to keep the picture synchronized.

Remove the oscilloscope. With the horizontal hold control in full clockwise position, adjust B1 until the picture is just out of sync as indicated by blanking bar appearing at left of picture.

Back off the frequency slug slightly until picture again locks in sync. Make this adjustment with the brightness control in full clockwise position.

HORIZONTAL DRIVE, WIDTH AND LINEARITY ADJUSTMENT

Adjust the horizontal drive trimmer, B3, by turning in a counter clockwise direction until the picture starts compressing in the center and vertical white lines appear. Then turn B3 in a clockwise direction until the compression and white lines just disappear. Minimum height occurs at this adjustment.

Adjust the horizontal size slug, (B4), and the horizontal linearity slug, (B5), for proper size and linearity of picture.

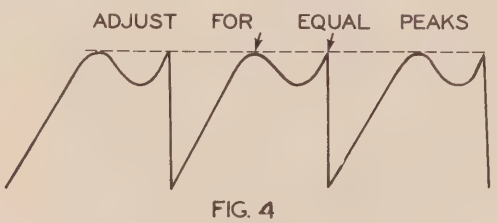


FIG. 4

DISASSEMBLY INSTRUCTIONS

1. Remove 6 Push On Type Control Knobs from front Panel.
2. Remove 5 wood scrws holding rear cover. Remove rear cover.
3. Disconnect Antenna and Speaker.
4. Remove 4 nuts holding Speaker. Remove Speaker.
5. Remove 2 wood screws. Remove 2 Picture Tube Bracket Supports.
6. Remove 5 Chassis Bolts. Remove Chassis.

NOTE. For Picture Tube Removal it is necessary to remove Chassis as outlined above.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	12AT7	12AT7	9A	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp.	6CB6	6CB6	7CM	
V5A	3rd Video IF Amp.	6BC5	6BC5	7BD	
B	3rd Video IF Amp.	6AG5	6AG5	7BD	
V6	Video Detector - Sound IF Amp.	6AU6	6AU6	7BK	
V7	Video Output	6CB6	6CB6	7CM	
V8	Keyed AGC	6AU6	6AU6	7BK	
V9	Limiter	6AU6	6AU6	7BK	
V10	Discriminator - AF Amplifier	6T8	6T8	9E	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	Noise Amplifier - Sync. Seperator	12AX7	12AX7	9A	
V13	Sync. Amplifier - Sync. Clipper	6SN7GT	6SN7GT	8BD	
V14	Vert. Mult.	6SN7GT	6SN7GT	8BD	
V15	Vert. Output	6W6GT	6W6GT	7AC	
V16	Horiz.AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V21A	20CP4A	20CP4A	12D	① Circuit Changes necessary - Low voltage focusing Circuit Required. ② Zero -Voltage Electrostatic focusing tube.
		20CP4		
		20DP4A		
		20DP4		
		20HP4A ①		
		20HP4 ①		
B	17BP4A	17BP4A	12D	
		17BP4		
		17BP4 ①		
		17RP4 ②		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	350	270021-43	AFH4-93		UPT4445-3335		7VL-4720	▲ Filter
B	35	350							■ Filter
C	30	350							▲ Decoupling
D	30	350							Decoupling
C2A	10	475	270021-45	AFH3-50				TVL-3718	▲ Vert. Output Screen
B	30	350		PRS50/100				TVA-1610	■ Decoupling
C	5	350							▲ Video Amp. Screen
D	80	50							Vert. Output Cathode
C3A	5	350	270023-17	AFH3-137		UP2135C		TVL-3634	▲ Decoupling
B	20	350							■ Audio Output Dec.
C	30	25							Audio Output Cathode
C4	15			SI15	D6-150		GP1K-150	5GA-Q15	RF Coupling
C5	470			SI470	D6-471		GP2K-471	5GA-T47	AGC Filter
C6	470			SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Screen Bypass
C7	470			SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Fil. Bypass
C8	.68				TCZ-.68		NP0K-R68		RF Coupling
C9	6						NP0K-060		RF Coupling †
C10	5			SI5NP0	TCZ-4.7		NP0K-050		RF Coupling
C11	68				TCZ-68		NP0-333-680	5TCC-Q68	Mixer Grid Filter
C12	1.2						NP0K-1R2		Osc. Coupling
C13	10			SI10N750	TCN-10		N750K-100	5TCU-Q1	Osc. Grid Cap.
C14	100						N150L-101		Osc. Feedback
C15	3						N750K-030		Fixed Trimmer
C16	10			SI10	D6-100		GP1K-100	5GA-Q1	Fixed Trimmer
C17	470			SI470	D6-471		GP2K-471	5GA-T47	RF Bypass
C18	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	RF Bypass
C19	470			SI470	D6-471		GP2K-471	5GA-T47	Conv. Fil. Bypass
C20	470			SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Plate Dec.
C21	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	RF Bypass
C22	100			SI100	D6-101	TM5T1	GP1K-101	5GA-T1	IF Coupling
C23	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	AGC Filter
C24	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	1st. Video IF Dec.
C25	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	1st. Video IF Fil.
C26	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	2nd. Video IF Grid
C27	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	Decoupling
C28	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	2nd. Video IF Dec.
C29	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	2nd. Video IF Fil.
C30	1500			BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	2nd. Video IF Fil.
C31	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	3rd. Video IF Grid
C32	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	3rd. Video IF Dec. ‡
C33	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	3rd. Video IF Fil. ‡
C34	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	Video Det. Dec.
C35	10			SI10	D6-100	5W5Q1	GP1K-100	5GA-Q1	Video Det. Filter
C36	12				TCZ-12		NP0K-120		Fixed Trimmer
C37	.1	600			P888-1	DF-104	PTE6P1	6TM-P1	Video Coupling
C38	.22	200			P488-22		P2P25	2TM-P22	Video Coupling
C39	.01	600			P888-01	D8-103	PTE6S1	GP2-333-103	6TM-S1 Keyed AGC Screen Bypass
C40	.01	600			P888-01	D8-103	PTE6S1	GP2-333-103	6TM-S1 AGC Filter
C41	.047	200			P288-047	DF-503	PTE4S47		2TM-S47 AGC Filter
C42	.22	200			P488-22		P2P25		2TM-P22 AGC Filter
C43	.1	200			P288-1	DF-104	P2P1		2TM-P1 AGC Filter

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C44	56	500		SI56	D6-560		GP1K-560		Sound IF Coupling
C45	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	Decoupling
C46	5000			BPD-005*	DD-502	TM5D5	811-005	5HK-D5	Limiter Plate Dec.
C47	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	Limiter Screen Bypass ‡
C48	5000			BPD-005	DD-502	TM5D5	811-005	5HK-D5	Limiter Fil. Bypass †
C49	100			SI100	D6-101	TM5T1	GP1K-101	5GA-T1	RF Bypass
C50	1000			SI1000	D6-102	TM5D1	GP2L-102	5HK-D1	De-Emphasis
C51	10000			BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C52	10000			BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C53	10000			BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C54	56	500						MS-46	Audio Feedback
C55	.22	200	250204-15	P488-22		PJ2P25		2TM-P22	Bias Filter
C56	240	500	250159-56	1469-00025		5R5T25			Sync. Coupling
C57	1500		250175-3	BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	Sync. Coupling
C58	.047	600	250203-11	P688-047	DF-503	PTE6S47		6TM-S47	Sync. Coupling
C59	10000		250175-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Sync. Coupling
C60A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		*250186-1	P688-005	*PC-100	PTE6D5	GP2-333-502	*101C1	Vert. Integrator Net.
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C61	.0068	600	250203-6	P688-0068		PTE6D68		6TM-D68	Vert. Osc. Grid Cap.
C62	4700	500	250161-24	1464-005		1DR5D5		MS-25	Vert. MV Feedback
C63	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	Vert. Discharge
C64	.001	600	250203-1	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Feedback Net. *
C65	.001	600	250203-1	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Feedback Net *
C66	.001	600	250203-1	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Feedback Net. *
C67	.047	600	250203-11	P688-047	DF-503	PTE6S47		6TM-S47	Vert. Sweep Coupling
C68	.022	600		P688-022		PTE6S22		6TM-S22	Fixed Trimmer ¶
C69	47	500	250159-78	1469-00005		5R5Q5		MS-45	Horiz. Sync. Coupling
C70	.047	600	250203-11	P688-047	DF-503	PTE6S47		6TM-S47	Horiz. AFC Plate
C71	.047	200	250203-11	P288-047	DF-503	PTE4S47		2TM-S47	Horiz. AFC Filter
C72	.022	200	250205-9	P488-022		PTE4S22		4TM-S22	Horiz. AFC Filter
C73	.47	200	250205-17	P288-47		PJ2P5		2TM-P47	Horiz. AFC Filter
C74	82	500	250159-81						Horiz. Feedback
C75	160 -	500							Horiz. Osc. Grid Cap. ††
C76	10000	500	250161-47					MS-11	Fixed Trimmer
C77	1000	500	250160-64	1464-001		1R5D1		MS-21	Horiz. Discharge
C78	.0068	600	250203-6	P688-0068		PTE6D68		6TM-D68	Horiz. Osc. Dec.
C79	470	500		1469-0005	D6-471	5R5T5	GP2K-471	MS-35	Horiz. Sweep Coupling
C80	.047	600	250203-11	P688-047	DF-503	PTE6S47		6TM-S47	Horiz. Output Screen
C81	.22	400	250204-15	P488-22		PTE4S22		4TM-P22	Horiz. Sweep Coupling
C82	.1	600	250203-13	P688-1		PTE6P1		6TM-P1	Damper Filter
C83	.047	600	250203-11	P688-047		PTE6S47		6TM-S47	Damper Filter
C84	500	20000	250189-1	HV20C	TV3-502	MM-C20T5			HV Filter
C85	.047	600	250203-11	P688-047	DF-503	PTE6S47		6TM-S47	Acc. Anode Dec. *
C86	.022	400		P488-022		PTE4S22		4TM-S22	Fixed Trimmer *

* Not used in all models.
† Some models use 1.5MMF in this application
‡ Some models use 4000MMF in this application
¶ Some models use .047 MFD in this application (Part #250203-11)
†† Some models use 180MMF in this application (Part #250159-53)
‡‡ Some models use 560MMF in this application (Part #250159-130)
♦ Items C60A, C60B, C60C, R74A, R74B, R74C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	220076-19	QI3-137	AG-63-Z	B-70	Volume Control - See Note 1
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
R2A	50KΩ	½	220076-44	QII-123	AG-44-S	B-31	Horiz.Hold Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R2A per instructions
R3A	100KΩ	½	220126-5	QII-128	AG-49-S	B-40	Brightness Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R3A per instructions
R4A	1.5Meg	½	220076-12	QII-138	AG-83-S	B-75	Vert. Hold Control - See Note 2
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R4A per instructions
R5A	1.5Meg	½	220076-5	QII-138	AG-83-S	AN-75	Height Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6	1500Ω	2	220126-4	WK-1500	43-1500	VK-130	Vert.Linearity Control - Wire Wound
R7A	600Ω	½	220126-7		AM-8-S	B-4-S	Contrast Control
B	Shaft		Not Req.		FS-3	Not Req.	Attach to R7A per instructions
C	Switch		Not Req.		SWA	Not Req.	Attach to R7A per instructions

Note 1. Some Models use Volume Control & SW (Part No. 220118-1)
Note 2. Some Models use Vert.Hold Control (Part No. 220076-28)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R8	3300Ω	½		BTS-3300	Antenna Coil Shunt
R9	22KΩ	½			RF Amp. Grid
R10	1000Ω	½		BTS-1000	RF Amp. Screen
R11	3900Ω	½		BTS-3900	RF Coil Shunt
R12	1000Ω	½		BTS-1000	RF Amp. Plate Decoupling
R13	47KΩ	½		BTS-47K	Mixer Plate
R14	27KΩ	½		BTS-27K	Mixer Grid
R15	68KΩ	½		BTS-68K	Mixer Grid
R16	22KΩ	½		BTS-22K	Osc. Coil Shunt
R17	22KΩ	½			Osc. Grid
R18	6800Ω	1			Osc. Plate
R19	150Ω	½		BTS-150	Decoupling
R20	10KΩ	½		BTS-10K	AGC Network
R21	47Ω	½	230104-46		1st.Video IF Amp. Cathode
R22	470Ω	½	230104-58	BTS-470	1st.Video IF Amp. Decoupling
R23	12KΩ	½			2nd.Video IF Coil Shunt
R24	470KΩ	½	230104-94	BTS-470K	2nd.Video IF Amp. Grid
R25	240KΩ	½			Voltage Divider - See Note 2
R26	47Ω	½	230104-46		2nd.Video IF Amp. Cathode
R27	470Ω	½	230104-58	BTS-470	2nd.Video IF Amp. Decoupling
R28	3300Ω	½	230104-88	BTS-3300	3rd.Video IF Coil Shunt
R29	100Ω	½	230104-50	BTS-100	3rd.Video IF Amp. Cathode
R30	100Ω	½	230104-50	BTS-100	3rd.Video IF Amp. Decoupling
R31	5600Ω	½	230104-71	BTS-5600	Video Det. Load
R32	22KΩ	1	230105-78	BTA-22K	Video Amp. Screen

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R33	3300Ω	1	230105-68	BTA-3300	Video Amp. Plate
R34	2200Ω	1	230105-66	BTA-2200	Video Amp. Plate
R35	10KΩ	½	230104-74	BTS-10K	Keyed AGC Grid
R36	33KΩ	½	230104-80	BTS-33K	Keyed AGC Screen
R37	39KΩ	½	230104-81	BTS-39K	AGC Network
R38	240KΩ 5%	½	230094-216	BTS-240K 5%	AGC Network
R39	180KΩ 5%	½	230094-213	BTS-180K 5%	AGC Network
R40	470KΩ 5%	½	230094-223	BTS-470K 5%	AGC Network
R41	4.7Meg 5%	½	230094-247	BTS-4.7Meg 5%	Voltage Divider
R42	100KΩ 5%	½	230094-207	BTS-100K 5%	Voltage Divider
R43	330KΩ	½	230094-219	BTS-330K	Voltage Divider
R44	220KΩ	½	230104-90	BTS-220K	Picture Tube Cathode
R45	82KΩ	½	230104-85	BTS-82K	Voltage Divider
R46	100Ω	½	230104-50	BTS-100	Sound IF Amp. Plate Decoupling
R47	220KΩ	½	230104-90	BTS-220K	Limiter Grid
R48	470Ω	½	230104-58	BTS-470	Limiter Cathode
R49	5600Ω	½	230104-71	BTS-5600	Voltage Divider
R50	10KΩ	1	230105-74		Limiter Screen
R51	470Ω	½	230104-58	BTS-470	Limiter Decoupling
R52	100KΩ	½	230104-86	BTS-100K	Discriminator Diode Load
R53	100KΩ	½	230104-86	BTS-100K	Discriminator Diode Load
R54	68KΩ	½	230104-84	BTS-68K	De-emphasis
R55	4.7Meg	½	230104-106	BTS-4.7Meg	AF Amp. Grid
R56	10Ω	½	230104-38		AF Amp. Cathode
R57	470KΩ	1	230105-94	BTA-470K	AF Amp. Plate
R58	470KΩ	1	230105-94	BTA-470K	Output Grid
R59	390Ω	1	230105-57	BTA-390	Output Cathode
R60	390Ω	1	230105-57	BTA-390	Output Decoupling
R61	100Ω	½	230104-50	BTS-100	Feedback Network
R62	100KΩ	½	230104-86	BTS-100K	Feedback Network
R63	180KΩ	½	230104-89	BTS-180K	Noise Amp. Plate
R64	68KΩ	½	230104-84	BTS-68K	Noise Amp. Grid
R65	270KΩ	½	230104-91	BTS-270K	Isolation
R66	4.7Meg	½	230104-106	BTS-4.7Meg	Sync. Seperator Grid
R67	22KΩ	½	230104-78	BTS-22K	Sync. Seperator Plate
R68	47KΩ	½	230104-82	BTS-47K	Sync. Amp. Cathode †
R69	47KΩ	½	230104-82	BTS-47K	Voltage Divider
R70	120KΩ	½	230104-87	BTS-120K	Sync. Amp. Plate
R71	1Meg	½	230104-98	BTS-1Meg	Sync. Clipper Grid
R72	390Ω	½	230104-57	BTS-390	Sync. Clipper Cathode
R73	3900Ω	½	230104-89	BTS-3900	Sync. Clipper Plate
R74A	22KΩ	♦		BTS-22K	Integrator Network
B	8200Ω	♦	250186-1	BTS-8200	Integrator Network
C	8200Ω	♦		BTS-8200	Integrator Network
R75	10KΩ	½	230104-74	BTS-10K	Vert. MV Feedback - See Note 3
R76	2200Ω	½	230104-66	BTS-2200	Vert.Peaking - See Note 4
R77	680KΩ	½	230104-96	BTS-680K	Vert. MV Grid - See Note 5
R78	100KΩ	1	230105-86	BTA-100K	Vert. MV Plate
R79	2.2Meg	½		BTS-2.2Meg	Vert. MV Plate - See Note 6
R80	33KΩ	½	230104-80	BTS-33K	Vert. MV Grid
R81	3300Ω	½	230104-68	BTS-3300	Feedback Network
R82	68KΩ	½	230104-84	BTS-68K	Decoupling
R83	5600Ω	½	230104-71	BTS-5600	Vert. Peaking
R84	47Ω	½	230104-46		Vert.Output Cathode - See Note 7
R85	1.5Meg	½	230104-100	BTS-1.5Meg	Vert. Output Grid - See Note 9
R86	56KΩ	½		BTS-56K	Vert. Output Screen - See Note 2
R87	56KΩ	½		BTS-56K	Vert. Output Screen - See Note 2
R88	47KΩ	½	230104-82	BTS-47K	Bleeder - See Note 2
R89	22KΩ	½	230104-78	BTS-22K	Transformer Shunt - See Note 2
R90	120KΩ	½	230104-87	BTS-120K	Voltage Divider
R91	3900Ω	½	230104-89	BTS-3900	Horiz. AFC Filter
R92	82KΩ	½	230104-85	BTS-82K	Horiz. AFC Cathode
R93	330KΩ	½	230104-92	BTS-330K	Horiz. AFC Cathode
R94	330KΩ	½	230104-92	BTS-330K	Horiz. AFC Grid
R95	820KΩ	½	230104-97	BTS-820K	Horiz. AFC Grid
R96	150KΩ	½	230104-88	BTS-150K	Horiz. Feedback
R97	150KΩ	½	230104-88	BTS-150K	Horiz. Osc. Grid
R98	8200Ω	½	230104-73	BTS-8200	Horiz. Osc. Coil Shunt
R99	47KΩ	1	230105-82	BTA-47K	Horiz. Osc. Plate
R100	2200Ω	½	230104-66	BTS-2200	Horiz. Osc. Plate Decoupling
R101	47Ω	½	230104-46		Parasitic Suppressor
R102	7500Ω	2	230096-180		Horiz. Output Screen
R103	680KΩ	½	230104-96	BTS-680K	Horiz. Output Grid
R104	470KΩ	½	230104-94	BTS-470K	Horiz. Output Grid - See Note 8
R105	680KΩ	½	230104-96	BTS-680K	Noise Amp. Grid
R106	1Meg	1	230105-98		HV Filter
R107	1300Ω	3	240021-30		Filter - Wire Wound
R108	210Ω	5	240021-29	1 3/4A-200	Filter - Wire Wound
R109	220KΩ	1	230105-90	BTA-220K	Line Isolation
R110	1Ω	½			HV Rectifier Filament - See Note 2
R111	1Ω	½			HV Rectifier Filament - See Note 2
R112	120KΩ	½	230104-87	BTS-120K	Voltage Divider

Note 1. Some Models use a 100Ω Resistor in this application (Part #230104-50)
Note 2. Not used in all Models
Note 3. Some Models use a 33KΩ Resistor in this application (Part #230104-80)
Note 4. Some Models use a 4700Ω Resistor in this application (Part #230104-70)
Note 5. Some Models use a 1.5Meg Resistor in this application (Part #230104-100)
Note 6. Some Models use a 1 Meg Resistor in this application (Part #230104-98)
Note 7. Some Models use a 560Ω Resistor in this application (Part #230105-59)
Note 8. Some Models use a 390KΩ Resistor in this application (Part #230104-93)
♦ Items R74A, R74B, R74C, C60A, C60B, C60C are combined in one unit
Note 9. Some Models use 2.2Meg Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MAGNAVOX PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @1.8A	600VCT @.280ADC	5VAC @3A	6.3VAC @.9A SEC.4 6.3VAC @.9A	300064-1			

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA MAGNAVOX PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	NOTES
T2	280Ω Tapped ⓐ23Ω	10.8Ω Tapped ⓐ.8Ω & 9.8Ω SEC.2 0Ω	320061-1		HV0-7 MWC-1 ①		Horiz. Output Trans.
T3	670Ω	14Ω	320060-1	A-8113			Vert. Output Trans.
T4A	14Ω		360515-2	DY-8	MDF-70		Hor. Deflection Coils
B	46Ω						Vert. Deflection Coils

① Replace width coil with MWC-1

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA MAGNAVOX PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	INSTALLATION NOTES
T5	5KΩ	3.6Ω	570Ω	.6Ω	320063-1	A-3823	A-3019	R0-303	

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA MAGNAVOX PART No.	REPLACEMENT DATA VIKING PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1A	P.M.	3.6Ω	583620	12J12	10A4A	
	CONE DIA.	V. C. DIA.				
SP1B	12"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA MAGNAVOX PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	INSTALLATION NOTES
L1	.260ADC	35Ω	.5 Henries	320058-1	C-2326 ②	C-2991 ②	TR-3300②	② Drill One New Mounting Hole.

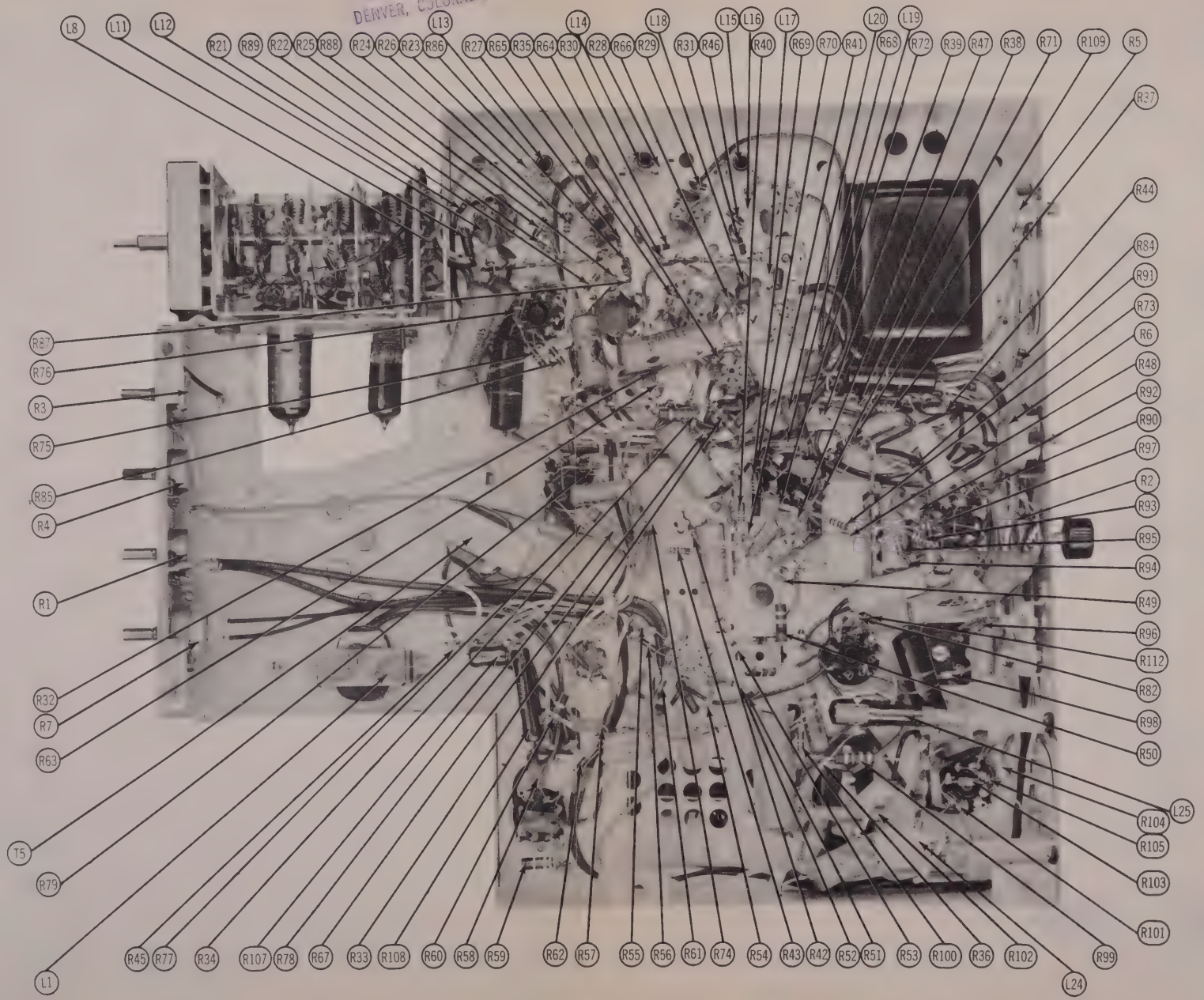
COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MAGNAVOX PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA IRC PART No.	NOTES
L2	Ant. Trans.	.1Ω	0Ω				
L3	Ant. Coils	0Ω	0Ω				
L4	Fil. Choke	.22Ω				CLA	.47 Microhenries
L5	RF Coils	0Ω					
L6	Mixer Grid Coils	0Ω					
L7	Osc. Coils	0Ω					
L8	RF Choke	.22Ω				CLA	.47 Microhenries
L9	Fil. Choke	.22Ω				CLA	.47 Microhenries
L10	1st. Video IF	.7Ω					Tap ⓐ .3Ω
L11	220MC Trap	0Ω					
L12	Grid Choke	2.6Ω		360443-16			Wound on 18KΩ Resistor
L13	2nd. Video IF	.4Ω	.4Ω	360461-1			
L14	3rd. Video IF	.4Ω	.4Ω	360461-1			
L15	4th. Video IF	.5Ω	.4Ω	360511-1			
L16	Peaking Coil	1Ω		360443-15			
L17	Peaking Coil	3.4Ω		360443-17	TV-151		Wound on 47KΩ Resistor
L18	Peaking Coil	10.5Ω		360443-6	TV-188		
L19	Peaking Coil	9Ω		360443-13	TV-185		Wound on 39K Resistor
L20	Peaking Coil	9.5Ω		360443-14	TV-185		Wound on 5.6K Resistor
L21	Sound IF	1.2Ω	1.2Ω	360519-1			
L22	Discr. Trans.	1.6Ω	1.5Ω	360512-1			Tap ⓐ .7Ω
L23	Horiz. Osc.	75Ω	43Ω	360499-1	TV-162		Tap ⓐ 21Ω
L24	Width Coil	1.1Ω	57Ω	360521-1			
L25	Horiz. Lin.	4.8Ω		360517-1	MWC-2		

MISCELLANEOUS

ITEM No.	PART NAME	MAGNAVOX PART No.	NOTES
M1	RF Tuner	700357-20	
M2	Focus Magnet		
M3	Ion Trap		
B3, B6	Trimmer	260106-G3	(Dual) Horiz. Drive-Horiz. Lock (110-560MMF)

PROPERTY OF
L. F. FLANNIGAN
3921 YORK ST.
DENVER, COLORADO



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PROPERTY OF
L. F. SL...
39?? MERRIE ST
DENVER, COLORADO

MASCO MODELS
RK-5, RK-5L, RK-5M, RK-5ML, RK-5SL

MASCO MODEL RK-5SL

TRADE NAME	Masco Models RK-5, RK-5L, RK-5M, RK-5ML, RK-5SL
MANUFACTURER	Mark Simpson Mfg. Co., Inc., 32-28 49th St., Long Island City (3) N. Y.
TYPE SET	AC Operated Disc Recorder with Crystal Cutter and Playback Amplifier
TUBES (FIVE)	Types 6SL7GT Mic. Pre Amp.-1st. AF Amp., 6SL7GT 2nd AF Amp.-Level Ind. Rect., 6X5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING .36 Amp. @ 117 Volts AC

FOR SERVICE INFORMATION ON RECORDER UNIT - GENERAL INDUSTRIES MODEL R-90L - SEE PHOTOFACT SET #35 FOLDER #28 OR RECORD CHANGER MANUAL CM-1.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		MASCO PART No.	STANDARD REPLACEMENT		
V1	Mic. Preamp.-1st. AF Amplifier	6SL7GT	6SL7GT	8BD	
V2	2nd. AF Amplifier-Level Ind. Rectifier	6SL7GT	6SL7GT	8BD	
V3	Audio Output	6V6GT	6V6GT	7AC	
V4	Level Indicator	6E5	6E5	6R	6G5 or 6U5 Alternate
V5	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

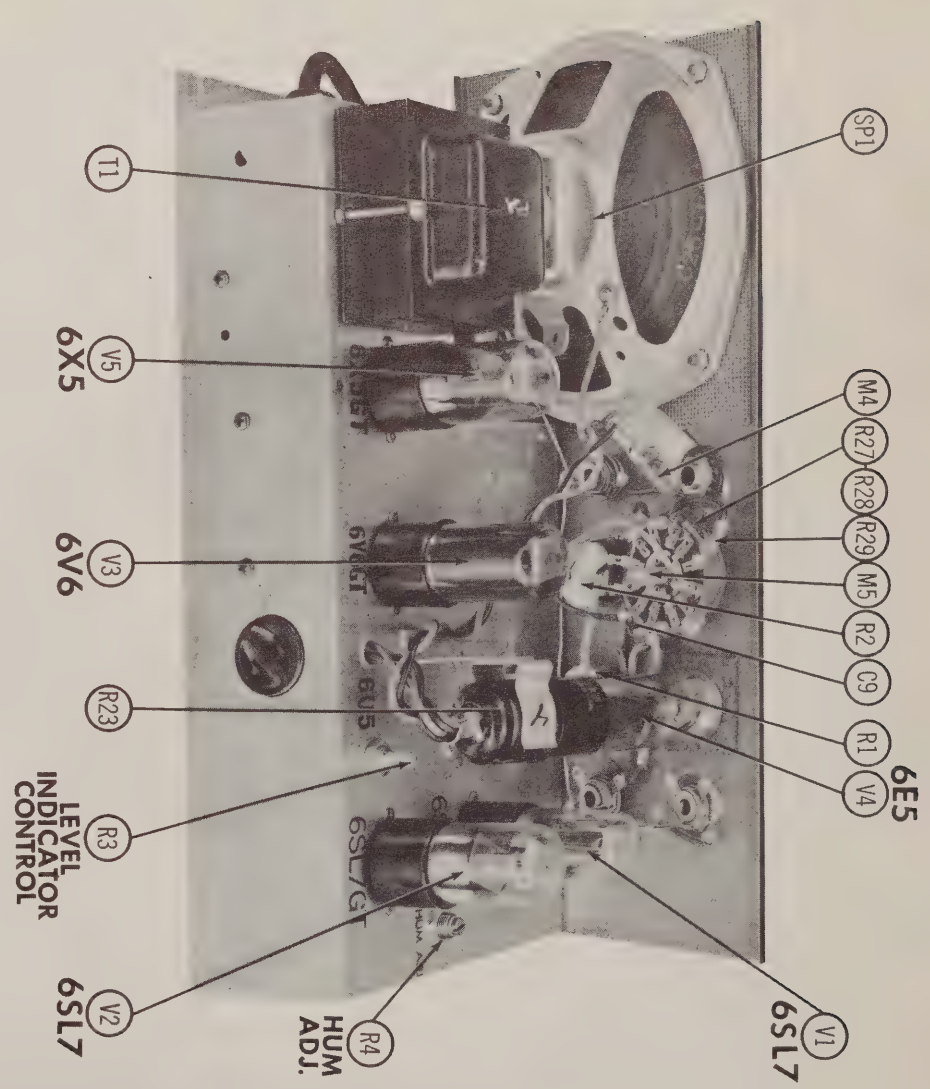
ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1	16	450		PRS450/16		BR1645A		TVA-1708	Filter
C2	16	450		PRS450/16		BR1645A		TVA-1708	Filter
C3A	8	450		PRS450/8-8		EDL8D45		TVA-2720	Mic. Pre Amp. Dec.
B	8	450							AF Amp. Decoupling
C4	10	50		PRS50/10		BR105		TVA-1304	Audio Output Cathode
C5	150	500		1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	Tone Comp. *
C6	150	500		1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	Tone Comp. *
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C8	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C9	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C10	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C11	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Level Ind. Coupling
C12	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47	Level Ind. Filter
C13	.1	600		P688-1	DF-104	PTE-6P1		6TM-P1	Cutter Coupling

* Used on Models RK-5L and RK-5ML only.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½	33-010-188	Q13-133	AM-60-Z	B-60	Volume Control
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Attach to R1A per instructions
R2A	500KΩ	½	33-010-188	Q13-133	AM-60-Z	B-60	Tone Control
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Attach to R2A per instructions
R3A	500KΩ	½	33-010-188	Q13-133	AM-60-Z	B-60	Level Indicator Control
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Attach to R3A per instructions
R4	50Ω	1		W-50	43-50		Hum Balance - Control - Wire Wound

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	
R5	250KΩ	½			Tone Compensation
R6	500KΩ	½			Tone Compensation
R7	3Meg	½			Mike Pre Amp. Grid
R8	1000Ω	½		BTS-1000	Mike Pre Amp. Cathode
R9	270KΩ	½		BTS-270K	Mike Pre Amp. Plate
R10	27KΩ	½		BTS-27K	Decoupling - See Note 1
R11	470KΩ	½		BTS-470K	Tone Compensation
R12	270KΩ	½		BTS-270K	Series Phono-See Note 2
R13	1.5 Meg	½		BTS-1.5Meg	Level Indicator Network
R14	2200Ω	½		BTS-2200	1st.AF Amp. Cathode
R15	50KΩ	½			1st. AF Amp. Plate
R16	5000Ω	½			2nd.AF Amp. Cathode
R17	50KΩ	½			2nd. AF Amp. Plate
R18	1Meg	½		BTS-1Meg	Feedback Network - See Note 3
R19	470KΩ	½		BTS-470K	Output Grid
R20	250Ω	2			Output Cathode
R21	5000Ω	½			Tone Compensation
R22	27KΩ	½		BTS-27K	Decoupling
R23	1Meg	½		BTS-1Meg	Level Indicator Plate
R24	15 Meg	½		BTS-15Meg	Level Indicator Grid
R25	50KΩ	½			Tone Compensation
R26	500KΩ	½			Crystal Shunt
R27	150Ω	½		BTS-150	Voice Coil Shunt - See Note 5
R28	150Ω	½		BTS-150	Voice Coil Shunt - See Note 2
R29	4Ω	½			Voice Coil Shunt - Wire Wound - See Note 4

Note 1. Some Models use a 47KΩ Resistor in this application
Note 2. Not used in all Models
Note 3. Some Models use a 10KΩ Resistor in this application
Note 4. This Resistor replaced by magnetic cutter on Models #RK-5M & #RK-5ML
Note 5. Some Models use a 75Ω Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @.36A	480VCT .055ADC	6.3VAC @2.1A		P5A	PM8402	P-3047	PH-50

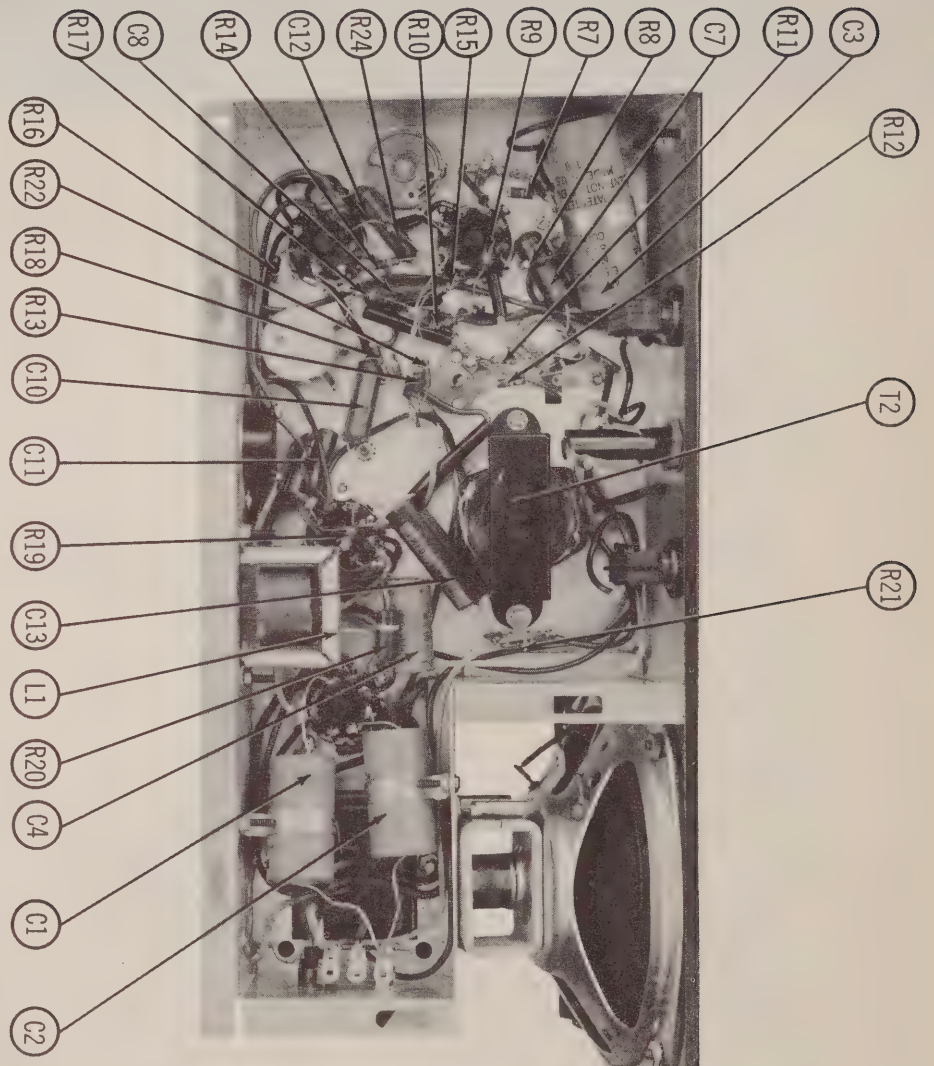
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	6.8KΩ	3.5Ω	360Ω	.5Ω		A-3824	A-3020①	RO-305	① Drill One New Mounting Hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	MASCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	3.5Ω		ST-108 Mod. P6-X	6A1	
	CONE DIA.	V. C. DIA.				
SP1B	6"	9/16"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.055ADC	270Ω	4.5Henries		C-1706	C-2975	R-650①	① Drill One New Mounting Hole

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MASCO PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	3A. 250V.			312003	341001	AGC3	HKP

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	MASCO PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2		LT4-D-1	D-33 D			96	0-1 or S-1 and 0-3 or S-3	
M8		* X-26						*Cutter Cartridge

ASTATIC AND ELECTRO VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PARTS LIST AND DESCRIPTIONS (Continued)

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

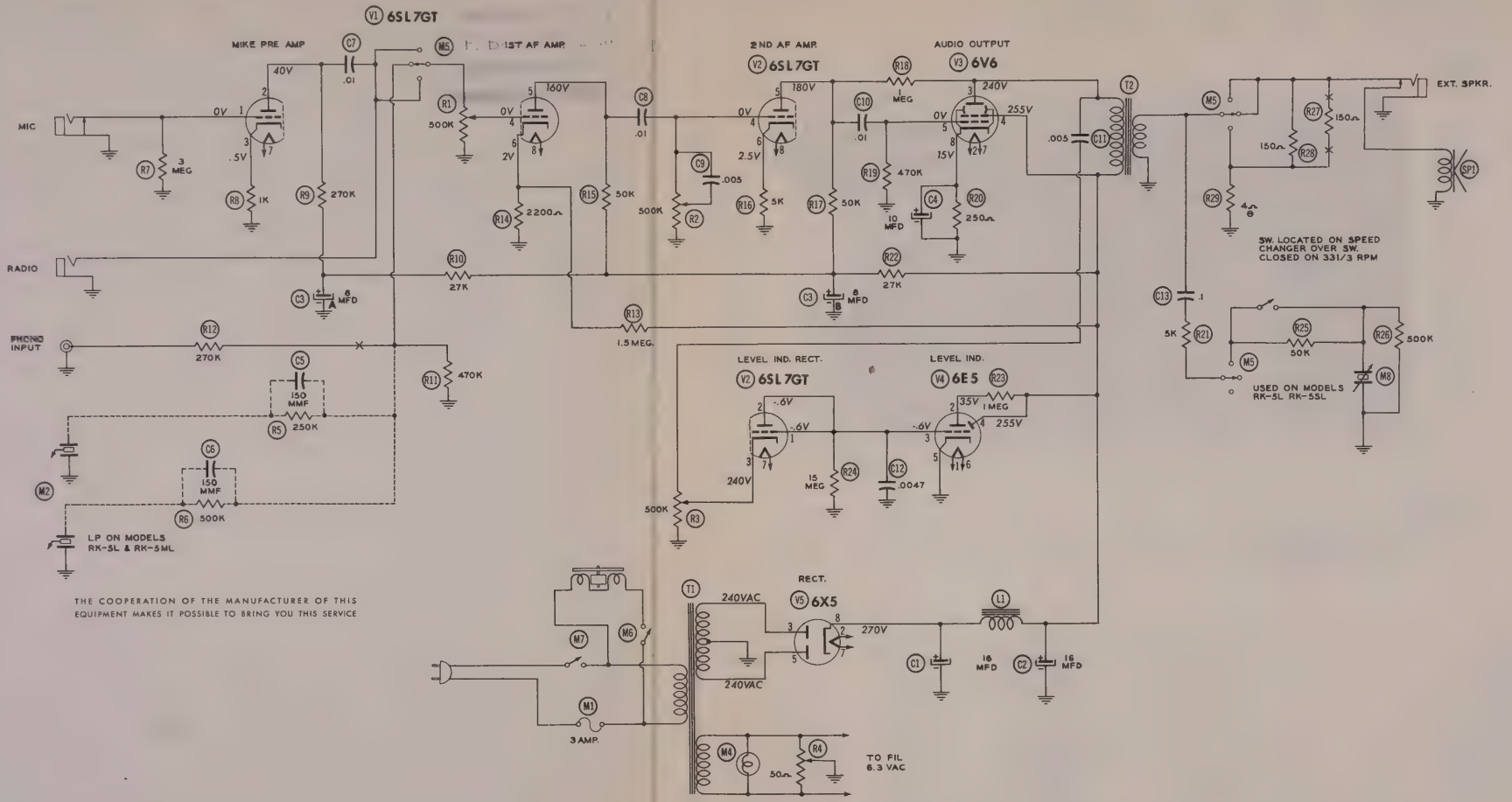
ITEM No.	REPLACEMENT DATA			REMARKS
	MASCO PART No.	WALCO PART No.	JENSEN PART No.	
M3		W-6A and W-6MGA	A-83 and A-83LP	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MASCO PART No.		
M4	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
M5	Switch		Function Selector
M6	Switch		Motor On-Off
M7	Switch		Amplifier on-Off



THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SL7GT	0Ω	†300KΩ	1KΩ	.8Ω	†80KΩ	2.2KΩ	¶0Ω	¶.1Ω
V 2	6SL7GT	15Meg	15Meg	60KΩ	500KΩ	†80KΩ	5KΩ	¶0Ω	¶.1Ω
V 3	6V6GT	0Ω	¶.1Ω	†630Ω	†270Ω	470KΩ	†630Ω	¶0Ω	270Ω
V 4	6E5	¶.1Ω	†1Meg	15Meg	†270Ω	0Ω	¶0Ω		
V 5	6X5GT	INF	¶.1Ω	170Ω	†270Ω	180Ω	INF	¶0Ω	45KΩ

ALL MEASUREMENTS TAKEN IN RECORD POSITION
† MEASURED FROM PIN 8 OF V5
¶ MEASURED FROM PIN 7 OF V5

1 - DC Voltage measurements are at 20,000 ohms per volt, AC voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1952

RCA VICTOR
MODEL PX600 (Ch. RC-1110)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

RCA VICTOR
MODEL PX600 (Ch. RC-1110)

RCA VICTOR
MODEL PX600 (Ch. RC-1110)

TRADE NAME	RCA Victor Model PX600 (Ch.RC-1110)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N. J.
TYPE SET	Three Power Portable Superheterodyne Receiver
TUBES (FIVE)	Types 1T4 RF Amp., 1R5 Conv., 1T4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output.
POWER SUPPLY	110-120 Volts AC/DC or 9 Volt "A" Supply & 90 Volt "B" Supply in Pack Form
RATING	.15 Amp. @ 117 Volts AC or 50MA @ 9 Volts DC & 13MA @ 90 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to the reference mark at the low frequency end of pointer carriage slide.
Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B -
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.005MFD	High side to Pin 6, (grid) of 1R5, (V2). Low side to B- .	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. If AC Power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
	Replace bottom cover and install set in cabinet. Connect loop.						
2.		Loop	1620KC	Tuning gang fully open.	Across voice coil.	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune for max. output.	"	A6, A7	"
4.		"	600KC	600KC	"	A8	Connect a 22KΩ Resistor across RF Section of tuning gang, (A6). Rock tuning gang while adjusting for max. output.
5.		"	"	Tune for max. output.		A9	Adjust for max. output. Repeat steps 2 thru 5 until no further improvement can be made.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

RCA VICTOR
MODEL PX600 (Ch. RC-1110)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	1T4	1T4	6AR	
V2	Converter	1R5	1R5	7AT	
V3	IF Amplifier	1T4	1T4	6AR	
V4	Det. AVC-AF Amp.	1U5	1U5	6BW	
V5	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	76659	AFH4-32		UP5515C			▪ Filter
B	40	150				BRH5015			■ Filter
C	160	25							▲ Fil. Filter
D	40	25							Fil. Filter
C2	82		71514	SI82	D6-820		GP1K-β20		RF Coupling
C3	.047	200	73553	P288-047	DF-503	PTE4S47		2TM-S47	AVC Filter
C4	.047	400	73553	P488-047	DF-503	PTE4S47		4TM-S47	RF Amp. Plate Dec.
C5	.047	200	73558	P288-047	DF-503	PTE4S47		2TM-S47	RF Amp. Screen Bypass
C6	.047	400	73558	P488-047	DF-503	PTE4S47		4TM-S47	Fil. Bypass
C7	56	500	39622					MS-46	Osc. Grid Cap.
C8	.0033	400	73795	P688-0033	D6-332	PTE6D33	GP2-333-332		IF Amp. Grid Filter
C9	4		73153				NP0K-040		Neutralizing Cap.
C10	.047	200	73553	P288-047	DF-503	PTE4S47		2TM-S47	Fil. Bypass
C11	.047	200	73553	P288-047	DF-503	PTE4S47		2TM-S47	Fil. Bypass
C12	82		71514	SI82	D6-820		GP1K-820		Diode RF Filter
C13	.01	200	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C14	180	500		1468-0002	D6-181	5W5T2	GP2K-181	1FM-32	AF Amp. Plate Bypass
C15	.022	200	73562	P488-022		PTE4S22		4TM-S22	AF Amp. Screen Bypass
C16	.01	400	73561	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C17	.0022	400	73595	P688-0022	D6-222	PTE6D22	GP2-333-222	6TM-D22	Audio Coupling
C18	.0039	400	73796	P688-004		PTE6D4		6TM-D4	Audio Output Plate
C19	.047	400	75071	489ZGXY-05		PJ4S5		4TM-S47	Line Filter
C20	.1	400	73551	P488-1		PTE4P1		4TM-P1	Line Isolation

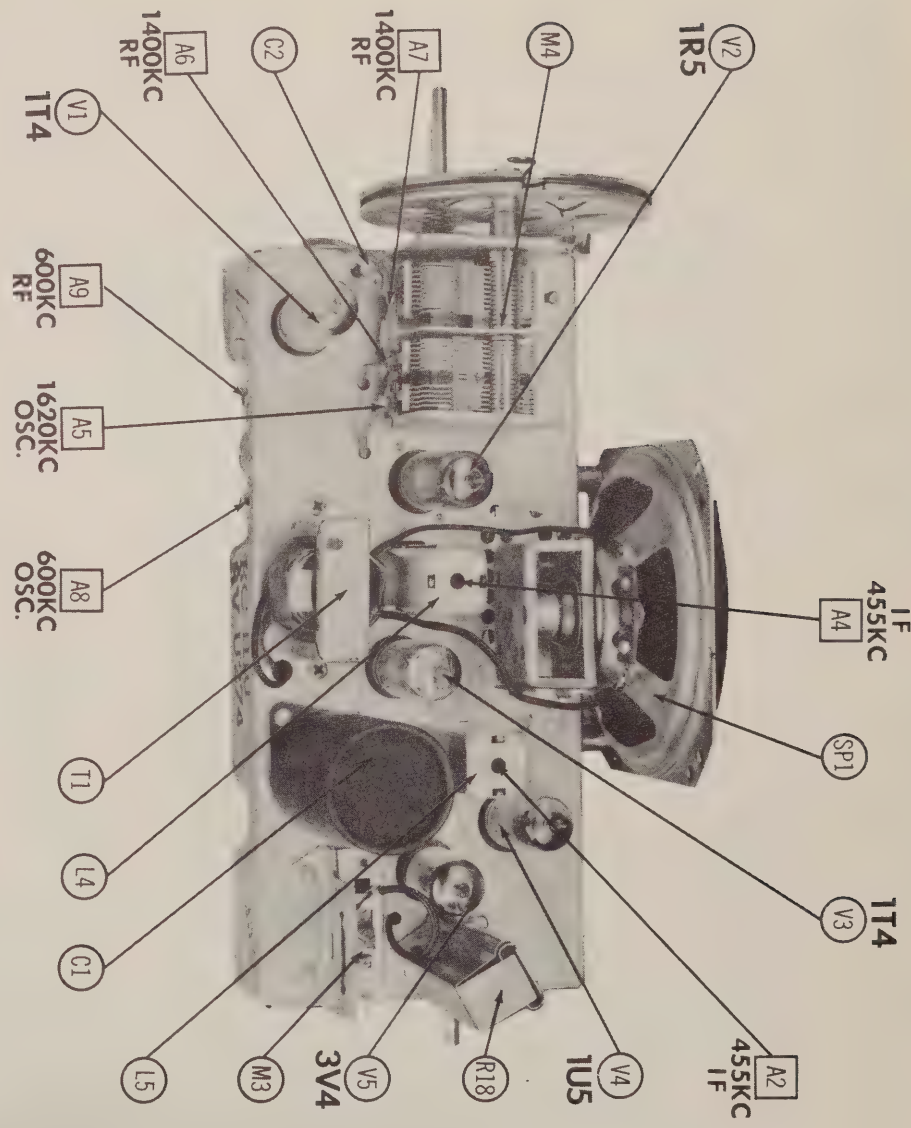
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB	INSTALLATION NOTES
R1A	1 Meg	½	74285	Q13-137	AG-63-Z	B-70-S	Volume Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-2	SWB-2	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
R2	6.8Meg	½	503568		RF Amp. Grid
R3	1.8Meg	½	503518	BTS-1.8Meg	AVC Network
R4	2700Ω	½	503227	BTS-2700	Filament String
R5	1000Ω	½	504210	BTS-1000	RF Amp. Plate Decoupling
R6	100KΩ	½	504410	BTS-100K	Osc. Grid
R7	1800Ω	½	503218	BTS-1800	RF Amp. Plate
R8	5.6Meg	½	503556		IF Amp. Grid
R9	3.3Meg	½	503533	BTS-3.3Meg	AVC Network
R10	68KΩ	½	504368	BTS-68K	Diode Filter
R11	10Meg	½	504610	BTS-10Meg	AF Amp. Grid
R12	220KΩ	½	504422	BTS-220K	AF Amp. Plate
R13	4.7Meg	½	504547	BTS-4.7Meg	AF Amp. Screen
R14	27KΩ	½	503327	BTS-27K	Screen Dropping
R15	1Meg	½	504510	BTS-1Meg	Output Grid
R16	1500Ω	½	503215	BTS-1500	Filament String
R17	1800Ω	½	503218	BTS-1800	Filament String
R18	2650Ω	7	74319		Filament Dropping - Wire Wound
R19	15KΩ	½	504315	BTS-15K	Filament String
R20	33Ω	½	73237		Surge Limiter - Wire Wound
R21	3300Ω	1	513233	BTA-3300	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	9.2KΩ	3.5Ω	400Ω	.4Ω	71047	A-3879	A-2932	R0-16	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	RCA PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	3.5Ω	76402	ST113 Mod. P4-X	4A1	
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	RCA PART No.	MERIT PART No.	
L1	Loop Ant.	3.6Ω		76664		
L2	RF Coil	90Ω	7.5Ω	74992		Tap @ 2.6Ω
L3	Osc. Coil	1.3Ω	6.2Ω	73114	BC-397	
L4	Input IF	20Ω	20Ω	73129	BC-352	
L5	Output IF	15Ω	15Ω	75487	BC-353 *	* Add 125MMFcap. to cathode lead.

SELENIUM RECTIFIER

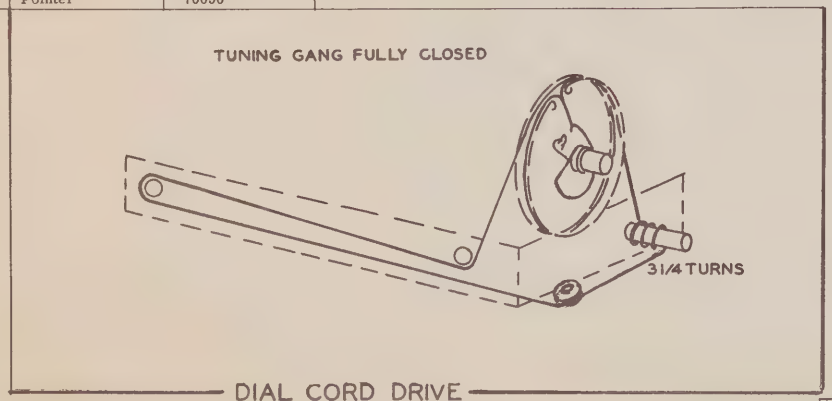
ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT	RCA PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART NO.	
M1	.060ADC	74322	NB-5	5M4	1003A	

BATTERIES

ITEM No.	VOLTAGE	RCA Victor PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2		VS-057			756			T6Z60	

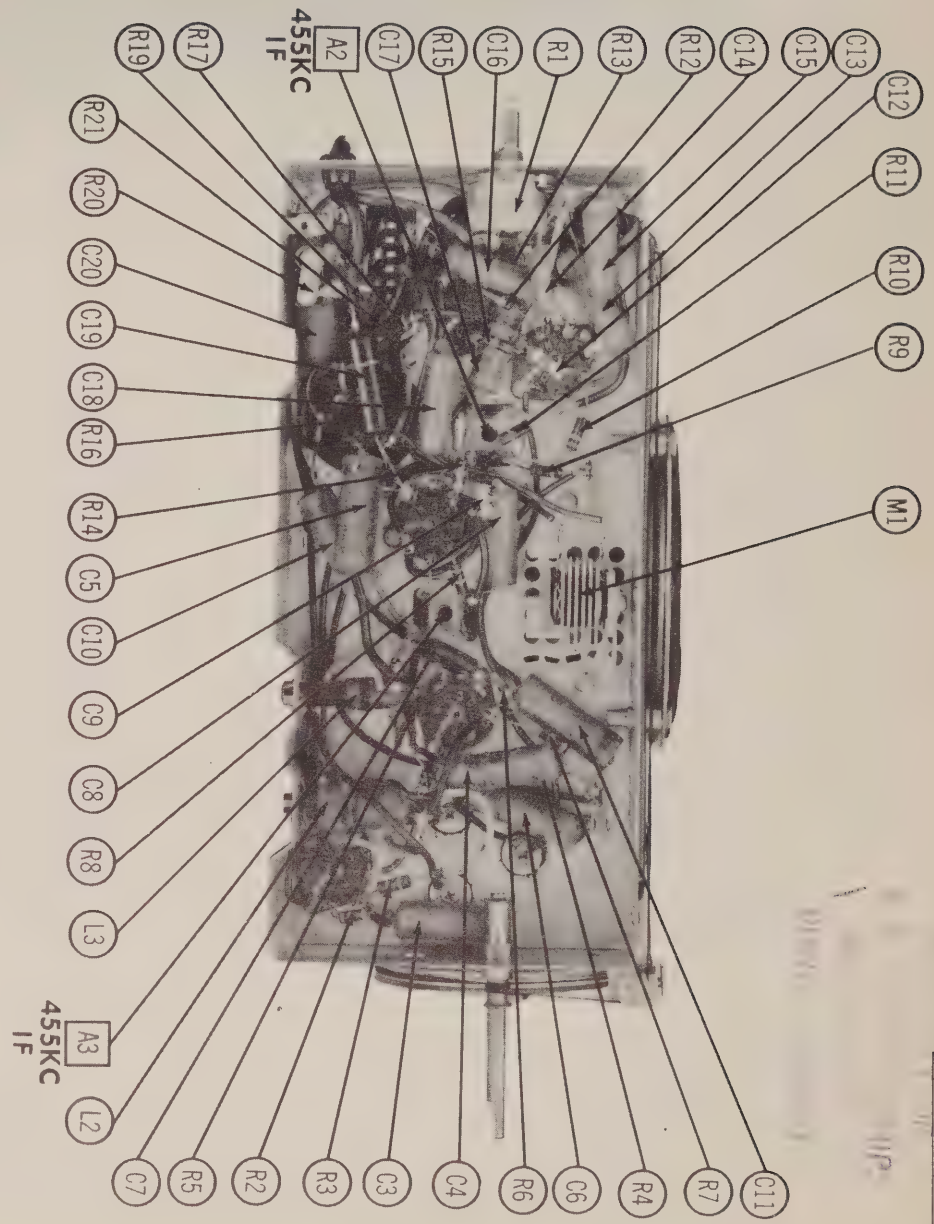
MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
M3	Switch	71039	Power Change-Over
M4	3 gang Var. Cap.	76660	(19-317MMF, 13-212MMF, 14-157MMF)
	Cabinet	76666	Includes Dial & Loop
	Knob	76663	Control
	Pointer	76656	



DIAL CORD DRIVE

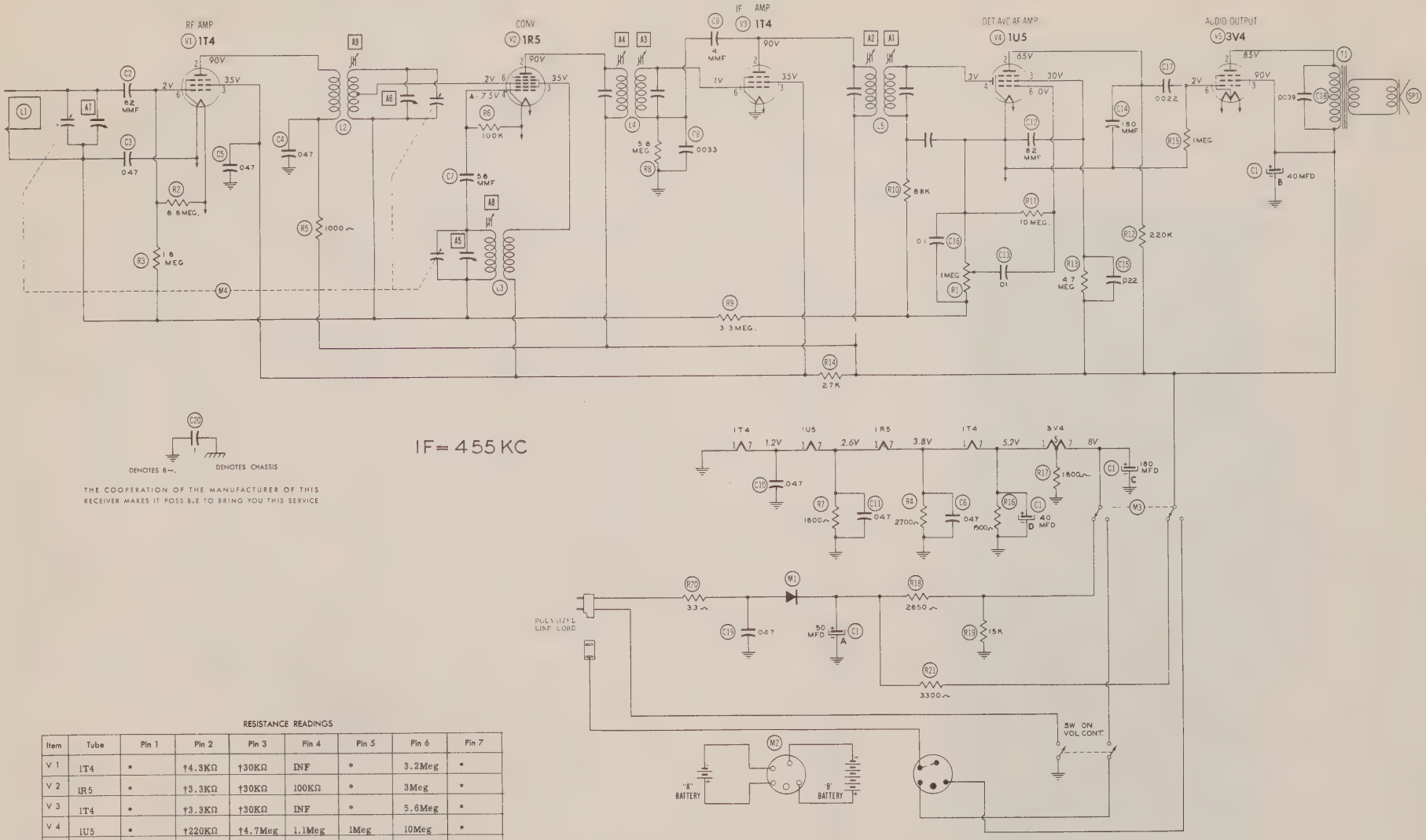
CHASSIS—BOTTOM VIEW



SET 168 FOLDER 12

RCA VICTOR
MODEL PX600 (Ch. RC-1110)

RCA VICTOR
MODEL PX600 (Ch. RC-1110)



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSS B.E TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1T4	*	†4.3KΩ	†30KΩ	INF	*	3.2Meg	*
V 2	1R5	*	†3.3KΩ	†30KΩ	100KΩ	*	3Meg	*
V 3	1T4	*	†3.3KΩ	†30KΩ	INF	*	5.6Meg	*
V 4	1U5	*	†220KΩ	†4.7Meg	1.1Meg	1Meg	10Meg	*
V 5	3V4	*	†3.7KΩ	†3.3KΩ	INF	*	1Meg	*

ALL MEASUREMENTS TAKEN WITH M3 IN AC LINE POSITION
† MEASURED FROM OUTPUT OF M1
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.
▲ TAKEN WITH VACUUM TUBE VOLTMETER.

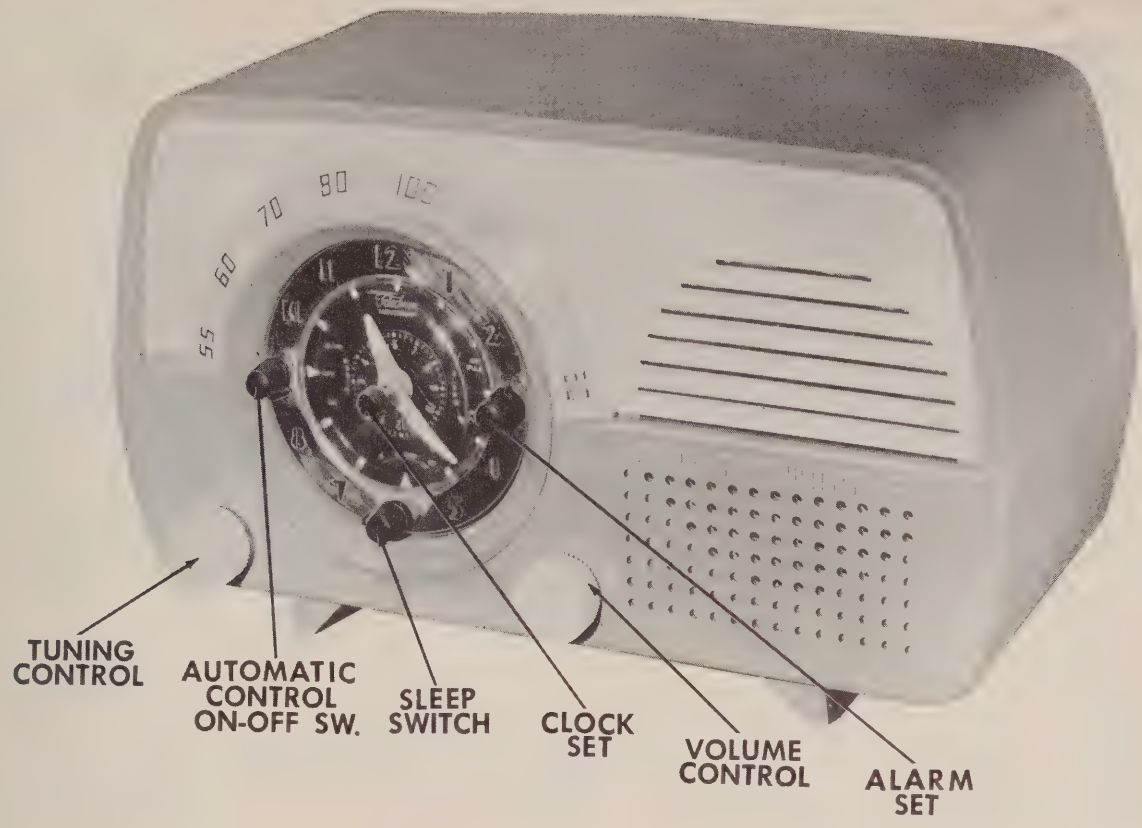
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1952

168-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

STEWART-WARNER
MODEL 9162A, B



STEWART-WARNER
MODEL 9162A, B

Stewart Warner Model 9162-A

TRADE NAME	Stewart-Warner Models 9162-A, 9162-B
MANUFACTURER	Stewart-Warner Corp., 1300N. Kostner Ave., Chicago 15, Ill.
TYPE SET	AC Operated Superheterodyne Receiver with Electric Clock
TUBES (FIVE)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .270 Amp@ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.		Loop	455KC (400~ Mod.)	Any point of non-interference.	Across voice coil.	A1, A2 A3, A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.		"	1500KC	Put receiver in cabinet and tune pointer to 1500 on dial. Remove receiver without disturbing tuning gang setting.	"	A5	"
3.		"	"	Tune to 1500KC signal	"	A6	"

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

STEWART-WARNER MODEL 9162-A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Stewart Warner PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det. AVC-AF Amp	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: Stewart Warner PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	520261	PRS150/50-30		EDL5315		TVA-2450	Filter (Red)
B	30	150							Filter (Blue)
C2	33		513028	SI33	D6-330		GP1K-330	5GA-Q33	Osc. Grid Cap.
C3	100	500	512503	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Decoupling
C4	.05	400	512029	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C5A	220			SI220		TM5T2	GP2K-221	5GA-T22	Diode RF Filter
B	2000		509836♦	SI2000		TM5D2	GP2-333-202	5HK-D2	Audio Coupling
C	125			SI120	♦ PC-150	TM5T12	GP2K-121	5GA-T12	AF Amp. Plate Bypass
D	5000			BPD-005		TM5D5	811-005	5HK-D5	Audio Coupling
E	125			SI120		TM5T12	GP2K-121	5GA-T12	Audio Output Grid
C6	.02	600	512017	P688-02	DF-203	PTE6S2		6TM-S2	Audio Output Plate
C7	.05	400	512029	P488-05	DF-503	PTE4S5		4TM-S5	Rectifier Plate
C8	.15	400	512040	P488-15		PTE4P15		4TM-P15	Line Isolation

♦ Items C5A, C5B, C5D, C5E, R5, R6, R7 are combined in one unit.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: Stewart Warner PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	520263	Q13-137	AG-63-Z	BSK-70	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions

RESISTORS

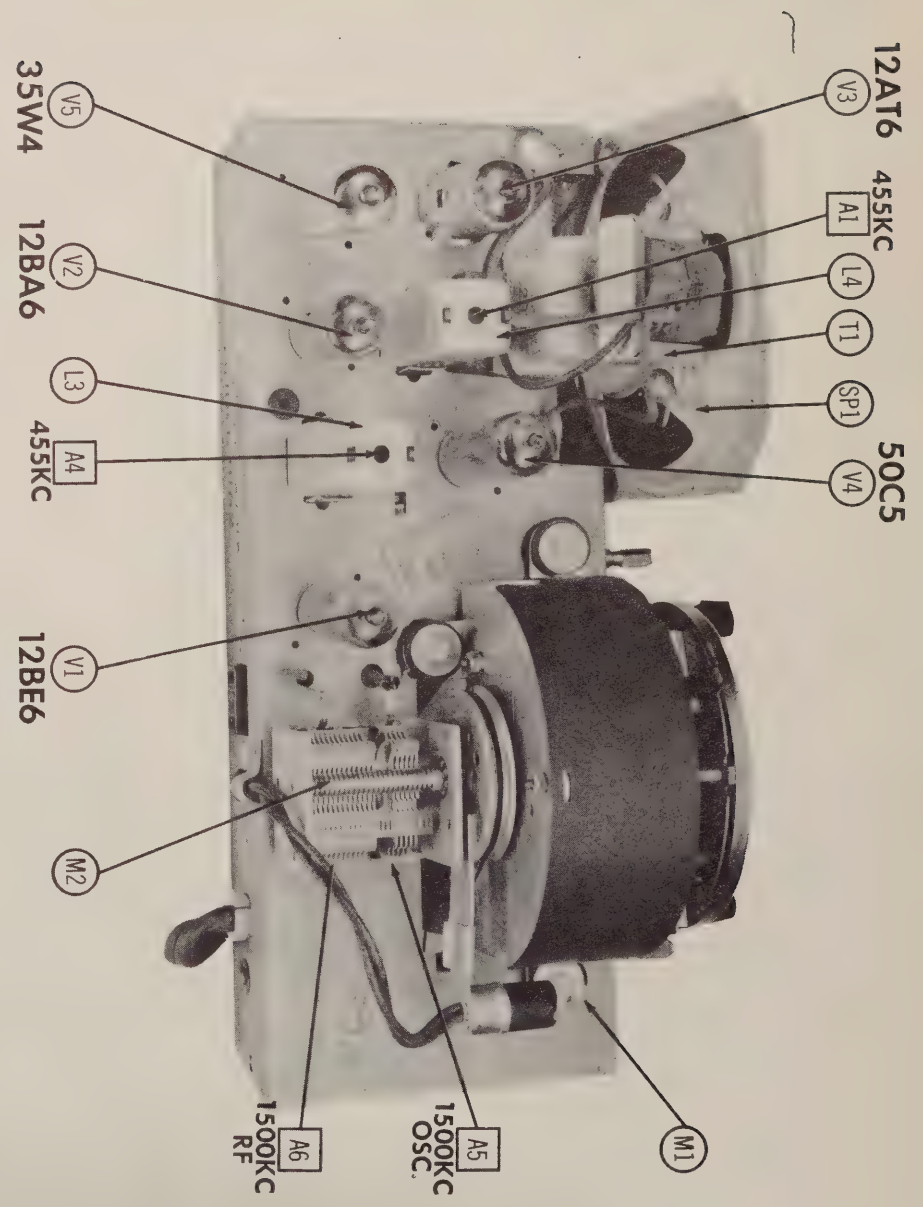
ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: Stewart Warner PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	510161		Osc. Grid
R3	100Ω	½	510119	BTS-100	IF Amp. Cathode
R4	3.3Meg	½	510194	BTS-3.3Meg	AVC Network
R5	6.8Meg	½		BTS-6.8Meg	AF Amp. Grid
R6	470KΩ	½	♦ 509836	BTS-470K	AF Amp. Plate
R7	470KΩ	½		BTS-470K	Output Grid
R8	150Ω	½	510122	BTS-150	Output Cathode
R9	1000Ω	1	510237	BTA-1000	Filter
R10	27Ω	½	510108		Rectifier Ballast
R11	330Ω	½	510128	BTS-330	Pilot Light Shunt

♦ Items R5, R6, R7, C5A, C5B, C5C, C5D, C5E are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA: Stewart Warner PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.5KΩ	3.7Ω	220Ω	.4Ω	Part of 520264	A-3332	A-3025	R0-2 ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	Stewart Warner PART No.	VIKING PART No.	QUAM PART No.	
SP1A	P.M.	3.7Ω	520264	4J4	4A07	
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

COILS (RF-IF)

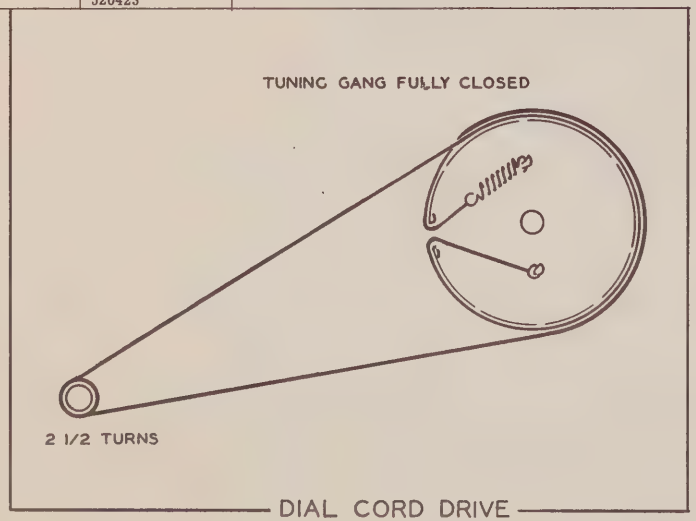
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Stewart Warner PART No.	MERIT PART No.	
L1	Loop Ant.	3.5Ω		520270		
L2	Osc. Coil	1Ω	10.6Ω	509832		
L3	Input IF	17Ω	17Ω	509433	BC-352	
L4	Output IF	17Ω	17Ω	509433	BC-353	

DIAL LIGHTS

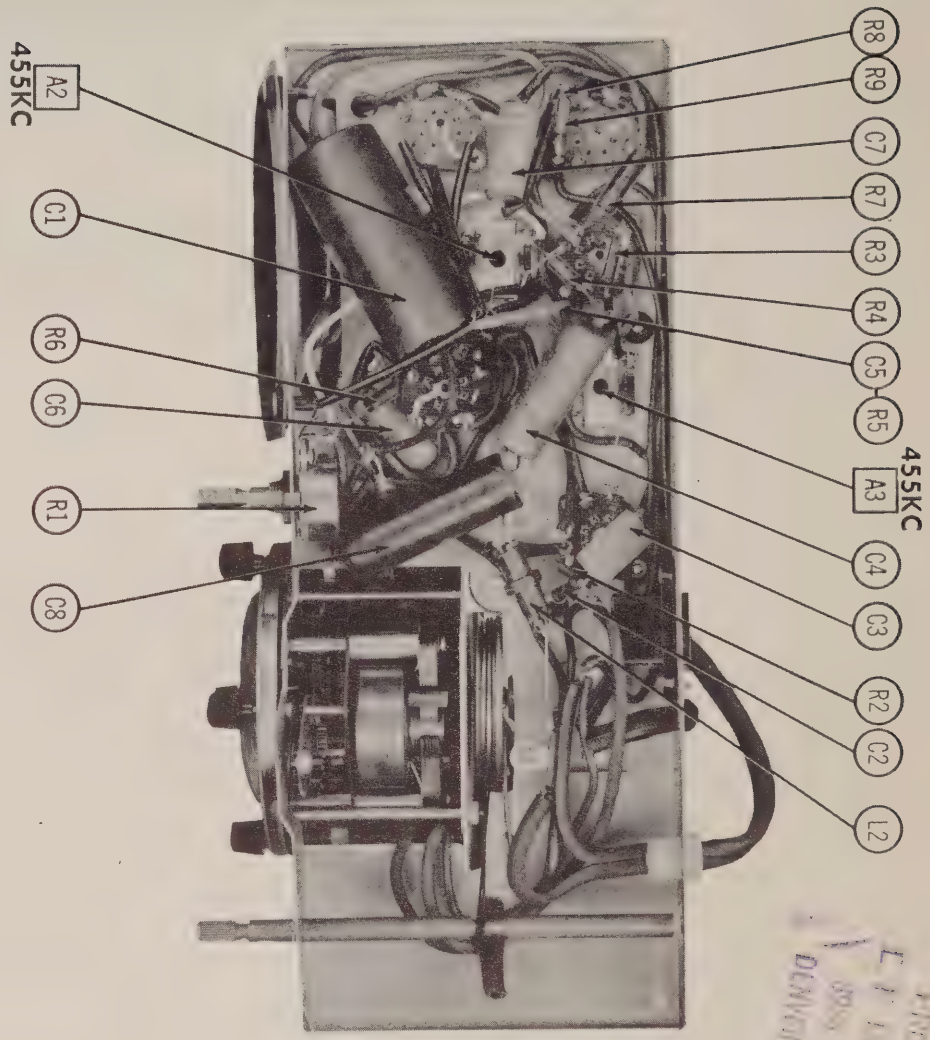
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Stewart Warner PART No.		
M1	Bayonet	6-8	.15	Brown	118921		Type No. #47

MISCELLANEOUS

ITEM No.	PART NAME	Stewart Warner PART No.	NOTES
M2	2 Gang Var. Cap.	520266	(22-387MMF, 13-157MMF)
	Cabinet	520250-A	Model 9162-A
	Cabinet	520250-B	Model 9162-B
	Dial Scale	520251	
	Knob	520539	Alarm, Radio Control
	Knob	520538	Time Set
	Knob	520252-A	Vol. or Tuning (Model 9162-A)
	Knob	520252-B	Vol. or Tuning (Model 9162-B)
	Pointer	520423	



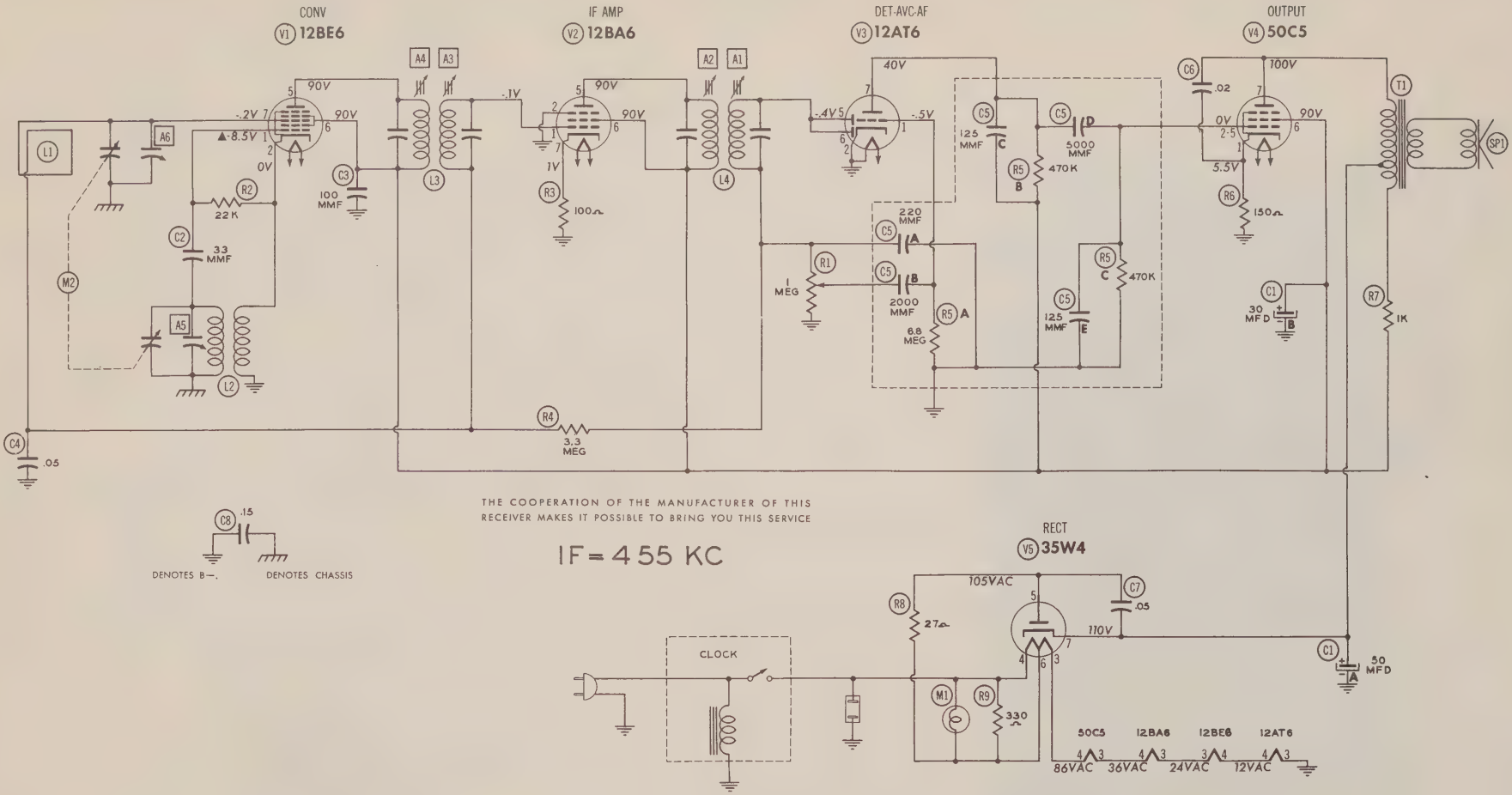
CHASSIS—BOTTOM VIEW



SET 168 FOLDER 13

STEWART-WARNER MODEL 9162-A

STEWART-WARNER MODEL 9162-A



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1Ω	24Ω	12Ω	†1KΩ	†1KΩ	4.3Meg
V 2	12BA6	4.3Meg	0Ω	24Ω	36Ω	†1KΩ	†1KΩ	100Ω
V 3	12AT6	6.8Meg	0Ω	0Ω	12Ω	1Meg	1Meg	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	86Ω	470KΩ	†1KΩ	†220Ω
V 5	35W4	†8.5Ω	INF	86Ω	121Ω	130Ω	103Ω	80KΩ

† MEASURED FROM PIN 7 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

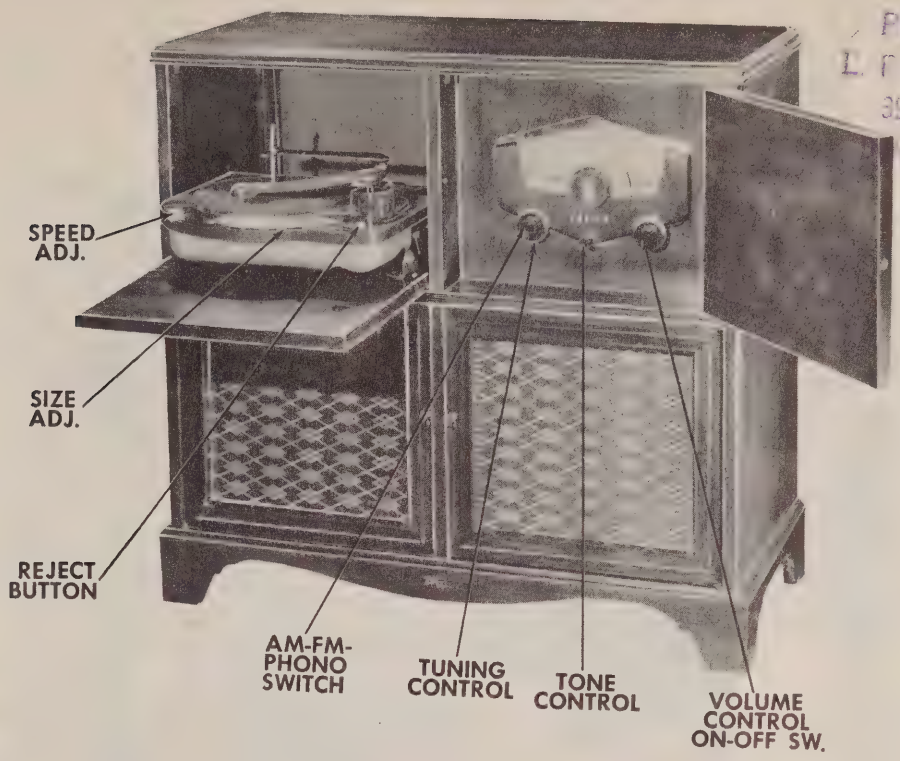
© Howard W. Sams & Co., Inc. 1952

168-13

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF

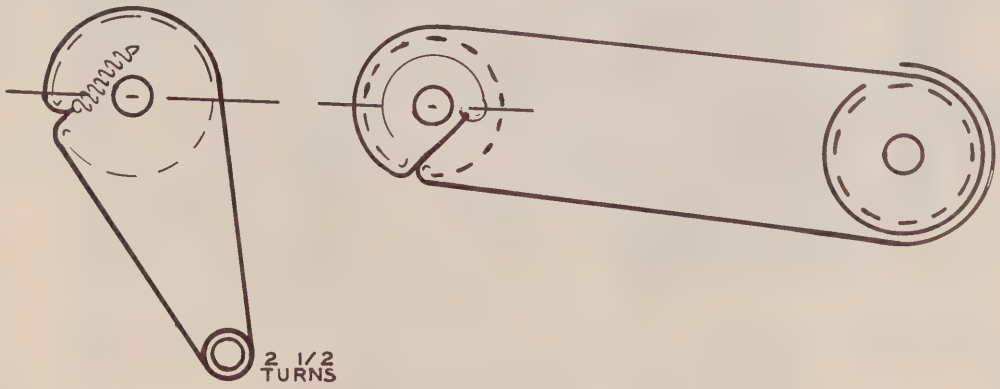
ZENITH
MODELS J880, J880R (Ch. 8H20Z)



TRADF NAME	Zenith Model J880, J880R (Ch. 8H20Z)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.
TYPE SET	AC Operated AM-FM-Phono Combination Superheterodyne Receiver
TUBES (Eight)	Types 12BA6 RF Amp., 12AT7 Conv. - Phono Osc., 12BA6 1st. AM FM IF Amp. - Phono Pre Amp., 12BA6 2nd. AM FM IF Amp., 12AU6 Limiter, 19T8 Discr.-AM Det.-AF Amp., 25L6GT Audio Output, 25Z6GT Rectifier
POWER SUPPLY	110-120 Volts AC - 60 Cycle RATING .67 Amp @ 117 Volts AC
TUNING RANGE - BROADCAST	540-1620 KC FREQ. MOD. 33-108 MC

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT S-14029 - SEE PHOTOFACT SET #145 - FOLDER #13

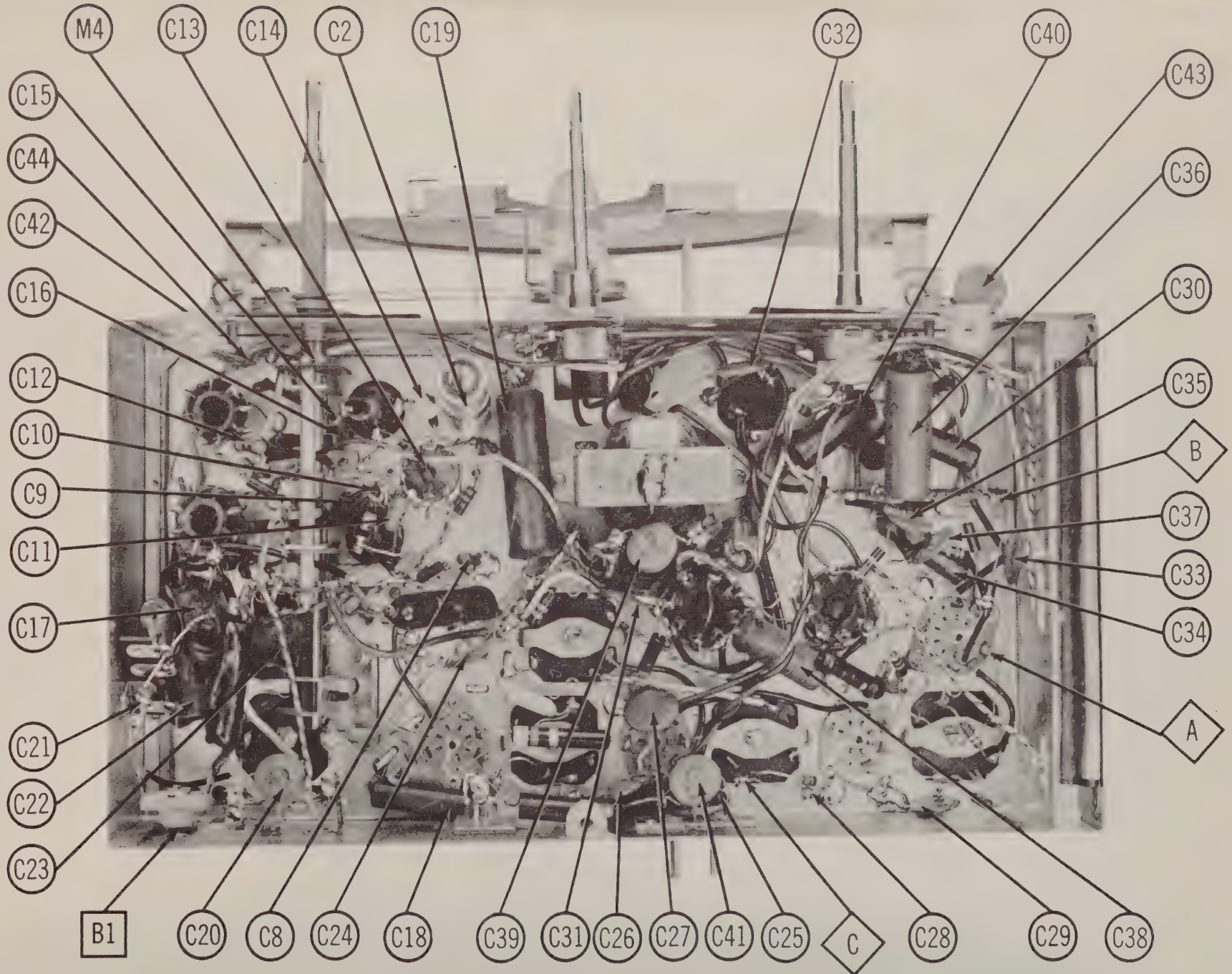
TUNING GANG FULLY CLOSED

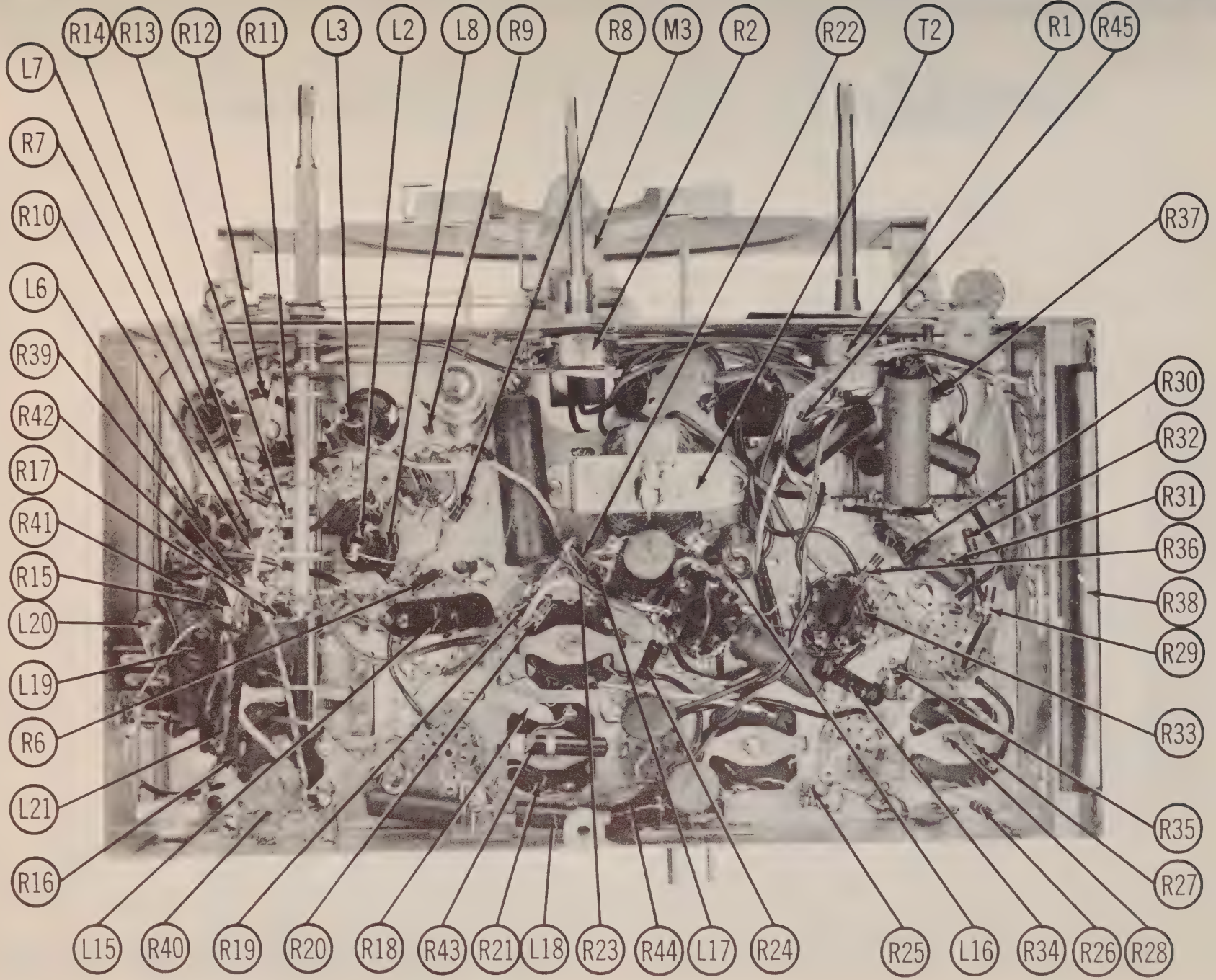


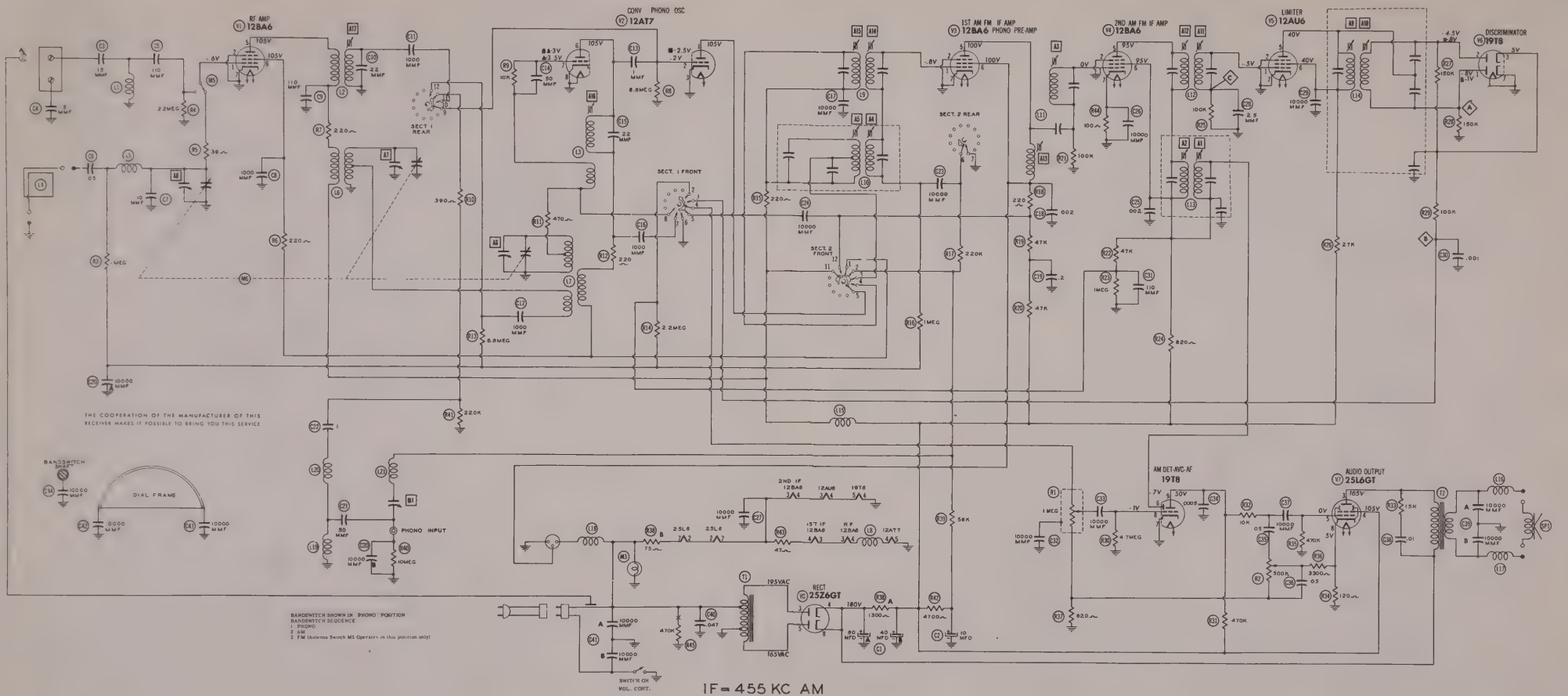
DIAL CORD DRIVE

ZENITH
MODELS J880, J880R (Ch. 8H20Z)

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


M4
C13
C14
C2
C19
C32
C40
C43
C15
C44
C36
C42
C16
C30
C12
C35
C10
B
C9
C37
C11
C33
C17
C34
A
C21
C22
C23
B1
C20
C8
C24
C18
C39
C31
C26
C27
C41
C25
C
C28
C29
C38


R14
R13
R12
R11
L3
L2
L8
R9
R8
M3
R2
R22
T2
R1
R45
L7
R7
R10
L6
R39
R42
R17
R41
R15
L20
L19
R6
L21
R16
R37
R30
R32
R31
R36
R38
R29
R33
R35
R27
L15
R40
R19
R20
R18
R43
R21
L18
R23
R44
L17
R24
R25
L16
R34
R26
R28



IF = 455 KC AM

IF = 10.7 MC FM

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12BA6	2.2Meg ■3.7Meg	0Ω	18Ω	12Ω	†1.5KΩ	†1.5KΩ	0Ω		
V 2	12AT6	†1.5KΩ	5.5Meg ■5.4Meg	0Ω	11Ω	0Ω	†1.5KΩ	10KΩ	0Ω	6Ω
V 3	12BA6	4.2Meg ■3.7Meg	0Ω	18Ω	24Ω	†1.5KΩ	†1.5KΩ	0Ω		
V 4	12BA6	100KΩ	0Ω	20Ω	23Ω	†2.1KΩ	†2.1KΩ	100Ω		
V 5	12AU6	100KΩ	0Ω	20Ω	14Ω	†27KΩ	†27KΩ	0Ω		
V 6	19T8	130KΩ ■150KΩ	130KΩ ■150KΩ	240KΩ ■300KΩ	0Ω	14Ω	1Meg ■500KΩ	0Ω	4.7Meg	†470KΩ
V 7	25L6GT	0Ω	30Ω	†250Ω	†1.3KΩ	470KΩ	†16KΩ	23Ω	120Ω	
V 8	25Z6GT	0Ω	30Ω	110Ω	30KΩ	49Ω	†1.3KΩ	35Ω	30KΩ	

ALL MEASUREMENTS TAKEN IN "FM" POSITION, UNLESS NOTED
■ MEASURED IN "AM" POSITION
† MEASURED FROM PIN 4 OF V8
▲ TAKEN WITH VACUUM TUBE VOLTMETER

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1952

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

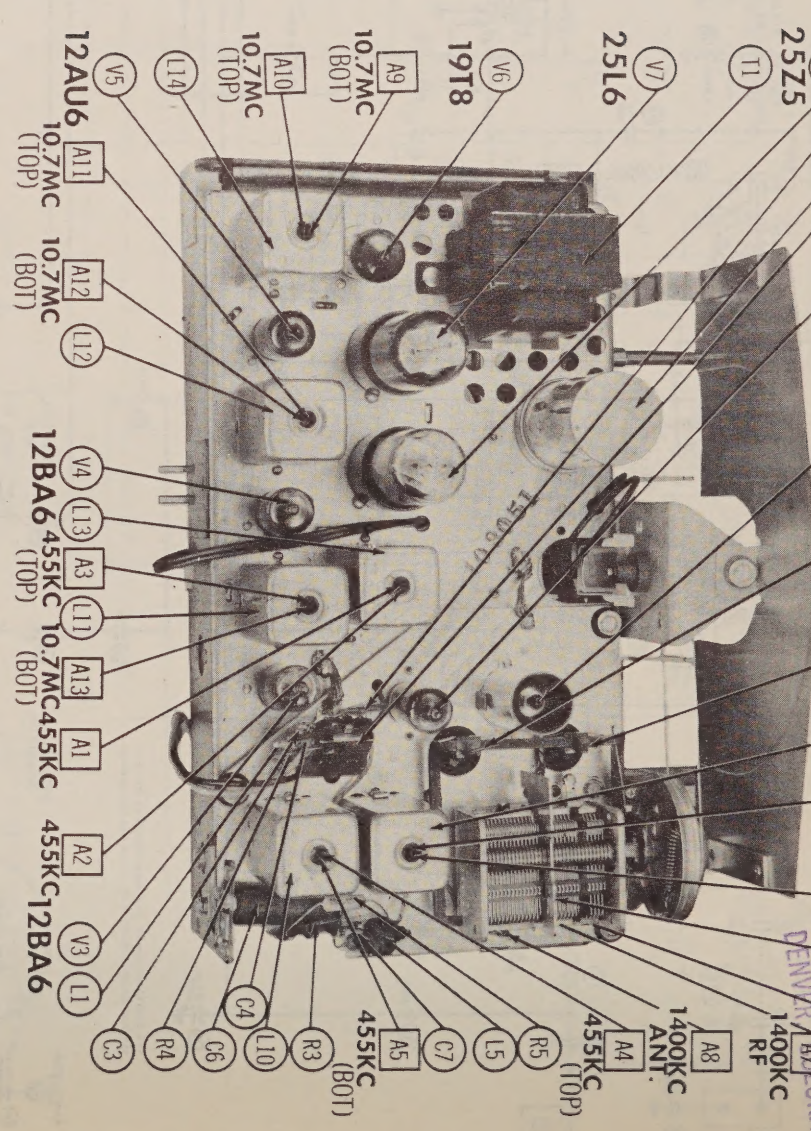
ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	12BA6	12BA6	7BK	
V2	Conv.-Phono Osc.	12AT7	12AT7	9A	
V3	1st. AM FM IF Amp Phono Pre-amp	12BA6	12BA6	7BK	
V4	2nd. AM FM IF Amp	12BA6	12BA6	7BK	
V5	Limiter	12AU6	12AU6	9A	
V6	Discriminator-AM Detector-AF Amplifer	19T8	19T8	9E	Aternate - 19C8
V7	Audio Output	25L6GT	25L6GT	9AC	
V8	Rectifier	25Z6GT	25Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	80	250	22-2105	AFH2-64		UPT38130		TVL-2582	▪ Filter
B	40	250							▲ Filter
C2	10	250	22-2154	PRS250/12		BR1225A		TVA-1504	Filter
C3	15		22-2140	SI15	D6-150		GP1K-150	5GA-Q15	FM RF Coupling
C4	15		22-2140	SI15	D6-150		GP1K-150	5GA-Q15	FM RF Coupling
C5	110		22-5	SI100	D6-101	TM5T1	GP1K-101	5GA-T1	FM RF Coupling
C6	.05	600	22-829	P688-05	DF-503	PTE6S5		6TM-S5	AM RF Coupling
C7	10		22-1863	SI10	D6-100	5W5Q1	GP1K-100	5GA-Q1	Fixed Trimmer
C8	1000		22-1676	SI1000	P6-102	TM5D1	GP2L-102	5HK-D1	RF Amp. Screen Bypass
C9	110		22-5	SI100	D6-101	TM5T1	GP1K-101	5GA-T1	FM Decoupling
C10	22		22-1506	SI22N080			N080-331-220		Fixed Trimmer
C11	1000		22-1676	SI1000	D6-102	TM5D1	GP2L-102	5HK-D1	FM RF Coupling
C12	1000		22-1676	SI1000	D6-102	TM5D1	GP2L-102	5HK-D1	AM RF Coupling
C13	1		22-1762		TCZ-1		NP0K-010		Osc. Coupling
C14	50		22-1367				N330L-500		Osc. Grid Cap.
C15	22		22-1506	SI22N080			N080-331-220		Fixed Trimmer
C16	1000		22-1676	SI1000	P6-102	TM5D1	GP2L-102	5HK-D1	Osc. Plate Bypass
C17	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Conv. Plate Dec.
C18	.002	600	22-1220	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	1st. IF Amp. Dec.
C19	.2	400	22-177	P488-2		PTE4P22		4TM-P22	RF Bypass
C20A	10000		22-2276	BPD-01	DD-3-103	TM5DS1	821-01	5HK-S1	AVC Filter
B	10000			BPD-01			821-01	5HK-S1	Phono Isolation
C21	50		22-1367				N330K-500		Phono Osc. Feedback
C22	.1	200	22-827	P288-1	DF-104	PJ2P1		2TM-P1	Audio Coupling
C23	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C24	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C25	.002	600	22-1220	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	2nd. IF Amp. Dec.
C26	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	2nd. IF Amp. Cathode
C27	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	2nd. IF Amp. Fil.
C28	25		22-1507		TCN-25		N750K-250	5TCU-Q25	Limiter Grid Filter
C29	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Limiter Decoupling
C30	.001	200	22-1717	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	De-Emphasis
C31	110		22-5	SI100	D6-101	TM5T1	GP1K-101	5GA-T1	Diode RF Filter
C32	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Volume Cont. Isolation
C33	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C34	.0005	600	22-854	SI500	D6-501	TM5T5	GP2K-501	5GA-T5	AF Amp. Plate Bypass
C35	4000		22-4	BPD-004	D6-402	TM5D4	822-004		Tone Comp.
C36	.05	600	22-829	P688-05	DF-503	PTE6S5		6TM-S5	Tone Comp.
C37	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Audio Coupling
C38	.01	600	22-669	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Output Plate
C39A	10000		22-2276	BPD-01	DD-3-103	TM5DS1	821-01	5HK-S1	Fixed Trimmer
B	10000			BPD-01			821-01	5HK-S1	Fixed Trimmer
C40	.047	400	22-1775	489ZGXY-05		PJ4S5		4TM-S47	Line Filter
C41A	10000		22-2276	BPD-01	DD-3-103	TM5DS1	821-01	5HK-S1	Line Filter
B	10000			BPD-01			821-01	5HK-S1	Line Filter
C42	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Dial Frame Isolation
C43	10000		22-3	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Dial Frame Isolation
C44	10000		22-3	BPD-01	DD-103	TM5S1	821001	5HK-S1	Bandswitch Isolation

CHASSIS—TOP VIEW



PROPERTY OF
ZENITH RADIO CORP.
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1Meg	½	63-2131	Q11-137	AG-61-S	AN-69	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R1A per instruction
C	Switch		Not Req.	76-1	SWB	K-155	Attach to R1A per instruction
R2A	500KΩ	½	63-2132	Q11-133		SB-209	Tone Control
B	Shaft		Not Req.	JQ, E190 *		Not Req.	Attach to R2A per instructions

* Cut JQ shaft so that when E190 is attached total length is correct.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	
R3	1Meg	½	63-1912	BTS-1Meg	AVC Network
R4	2.2Meg	½	63-1926		RF Amp. Grid
R5	39Ω	½	63-1726		Parasitic Suppressor
R6	220Ω	½	63-1758	BTS-220	RF Amp. Screen
R7	220Ω	½	63-1758	BTS-220	RF Amp. Plate Decoupling
R8	6.8Meg	½	63-1947		Mixer Grid
R9	10KΩ	½	63-1827		Osc. Grid
R10	390Ω	½	63-1768		Parasitic Suppressor
R11	470Ω	½	63-1772		Parasitic Suppressor
R12	220Ω	½	63-1758	BTS-220	Osc. Plate Decoupling
R13	6.8Meg	½	63-1947	BTS-6.8Meg	AVC Network
R14	2.2Meg	½	63-1926	BTS-2.2Meg	AVC Network
R15	220Ω	½	63-1758		Parasitic Suppressor
R16	1Meg	½	63-1912	BTS-1Meg	AVC Network
R17	220KΩ	½	63-1884	BTS-220K	Tone Compensation
R18	220Ω	½	63-1758	BTS-220	1st. AM FM Amp. Plate
R19	47KΩ	½	63-1856		Voltage Divider
R20	47KΩ	½	63-1856		Voltage Divider
R21	100KΩ	½	63-1870		2nd. AM FM IF Amp. Grid
R22	47KΩ	½	63-1856	BTS-47K	Diode Filter
R23	1Meg	½	63-1912	BTS-1Meg	Diode Det. Load
R24	820Ω	½	63-2091	BTS-820	2nd. AM FM IF Amp. Decoupling - Wire Wound
R25	100KΩ	½	63-1869	BTS-100K	Limiter Grid
R26	27KΩ	½	63-1845	BTS-27K	Limiter Decoupling
R27	150KΩ	½	63-1876	BTS-150K	Discriminator Load
R28	150KΩ	½	63-1876	BTS-150K	Discriminator Load
R29	100KΩ	½	63-1870	BTS-100K	De-Emphasis
R30	4.7Meg	½	63-1940	BTS-4.7Meg	AF Amp. Grid
R31	470KΩ	½	63-1898	BTS-470K	AF Amp. Plate
R32	10KΩ	½	63-1828	BTS-10K	Tone Compensation
R33	15KΩ	½	63-1834	BTS-15K	Tone Compensation
R34	120Ω	1	63-1981	BTA-120	Output Cathode
R35	470KΩ	½	63-1898	BTS-470K	Output Grid
R36	3300Ω	½	63-1806	BTS-3300	Tone Compensation
R37	820Ω	½	63-1782	BTS-820	Tone Compensation
R38A	1300Ω	5	63-2068		Filter - Wire Wound
B	75Ω	5			Filament Dropping - Wire Wound
R39	56KΩ	½	63-1859	BTS-56K	Voltage Divider
R40	10Meg	½	63-1954	BTS-10Meg	Phono Input Shunt
R41	220KΩ	½	63-1884	BTS-220K	Phono Pre Amp. Grid
R42	4700Ω	½	63-1814	BTS-4700	Filter
R43	47Ω	1	63-2093		Filament Dropping - Wire Wound
R44	100Ω	½	63-1744	BTS-100	2nd. AM FM IF Amp. Cathode
R45	470KΩ	½	63-1898	BTS-470K	Line Isolation - See Note

Note: Not used in all models

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ .67A	340VCT .110ADC			95-1188			

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	2.8KΩ	3.3Ω	250Ω	.6Ω	95-1272	A-3849	A-2902	RO-307	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	ZENITH PART No.	VIKING PART No.	QUAM PART No.	
SP1A	P M	3.3Ω	49-702	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP1B	12"	1"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ZENITH PART No.	MERIT PART No.	
L1	FM Ant. Coil	0Ω		S-16408		
L2	FM RF Coil	0Ω	0Ω	S-15743		
L3	FM osc. Coil	0Ω	0Ω	S-15691		
L4	AM Loop Ant.	.2Ω		S-16841		
L5	AM Ant. Loading Coil	3.2Ω		S-17328		
L6	AM RF Coil	2.7Ω	11.1Ω	S-16344		Tap @ 3.7Ω
L7	AM Osc. Coil	1Ω	8.2Ω	S-16345		Tap @ 3.5Ω Tertiary Winding 1.4Ω
L8	Fil. Choke	1Ω		S-13997		
L9	1st. FM IF	.4Ω	.4Ω	95-1201		
L10	1st. AM IF	4.6Ω	15Ω	95-1248		
L11A	2nd. FM IF	1.6Ω		95-1251		
L11B	2nd. AM IF	24Ω				Part of L11A
L12	3rd. FM IF	.5Ω	.5Ω	95-1150		
L13	3rd. AM IF	16Ω	16Ω	95-1102		
L14	Discr. Trans.	.5Ω	.5Ω	95-1153		
L15	RF Choke	0Ω		20-337		
L16	RF Choke	0Ω		20-337		
L17	RF Choke	0Ω		20-337		
L18	RF Choke	0Ω		20-337		
L19	Phono Osc. Coil	2Ω		S-12603		
L20	RF Choke	0Ω		20-337		
L21	RF Choke	0Ω		20-337		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ZENITH PART No.		
M3	Bayonet	115-125	10 Watts		100-97		

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Phono Cartridge Assembly	S-15780	
M2			
M4	Switch	85-506	Function Selector
M5	Switch	85-505	AM-FM Antenna
M6	3 Gang Var. Cap	22-2104	(21-488MMF, 40-222MMF, 12-164MMF)
B1	Trimmer	22-2240	Phono Osc. Adj. (10-150MMF)
	Cabinet	14-1335	Model J880
	Cabinet	14-1335R	Model J880R
	Dial Glass	192-138	
	Knob	46-873	Tone
	Knob	46-876	Tuning
	Knob	46-899	Band Switch

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

With tuning gang fully closed, set the pointer so that the center of the pointer tip is 1 9/32 inches above the bottom of the dial back plate.

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 2 (grid) 12AT7 (V2). Low side to chassis.	455 KC (400∿ Mod)	A.M. (Center)	600 KC	Across Voice Coil	A1, A2 A3, A4 A5	Adjust in order given for maximum output.
2.		Loop	1600 KC	"	1600 KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400 KC	"	1400 KC	"	A7, A8	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.05MFD	High side to pin 1 (grid) of 12AU6 (V5) Low side to chassis	10.7 MC Unmod.	FM (Extreme clockwise)	Tuning gang fully closed.	DC probe to point A. Common to chassis.	A9	Adjust for maximum deflection
5.	"	"	"	"	"	DC probe to point B Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct reading.
6.	"	High side to pin 1 (grid) 12BA6 (V4) Low side to chassis	"	"	"	DC probe to point C Common to chassis.	A11, A12	Adjust for maximum deflection.
7.	"	High side to pin 1 (grid) 12BA6 (V3) Low side to chassis	"	"	"	"	A13	"
8.	"	High side to pin 2 (grid) of 12AT7 (V2) Low side to chassis	"	"	"	"	A14, A15	"

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.05MFD	High side to pin 1 (grid) of 12AU6(V5) Low side to chassis	10.7MC (450 KC SWP)	FM (Extreme Clockwise)	Point of non-interference.	Vertical amp through 47KΩ to point A. Low side to chassis	A9	Adjust for maximum amplitude and symmetry as per fig. 1.
5.	"	"	"	"	"	Vertical amp through 47KΩ to point B. Low side to chassis.	A10	Adjust A10 so 10.7 MC occurs at center of crossover lines as per fig. 2. SLIGHTLY retouch A9 for maximum amplitude and straightness
6.	"	High side to pin 1 (grid) of 12BA6 (V4) Low side to chassis.	"	"	"	Vertical amp through 47KΩ to point C. Low side to chassis	A11, A12	Adjust for maximum amplitude and symmetry as per fig. 1
7.	"	High side to pin 1 (grid) of 12BA6 (V3) Low side to chassis	"	"	"	"	A13	"
8.		High side to pin 2 (grid) of 12AT7 (V2) Low side to chassis	"	"	"	"	A14, A15	"

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	270Ω Carbon Resistors	High side through 270Ω to ungrounded FM antenna terminal Low side to chassis	98 MC Unmod.	FM	98MC	DC probe to point C. Common to chassis	A16, A17	Adjust for maximum deflection.

PHONO OSCILLATOR ADJUSTMENT

If the set oscillates when turned to phono position, the phono oscillator adjustment B1, should be adjusted to eliminate it. Changing the phono cartridge may necessitate adjusting B1.

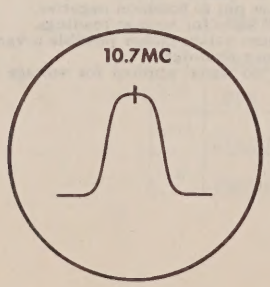


FIG. 1

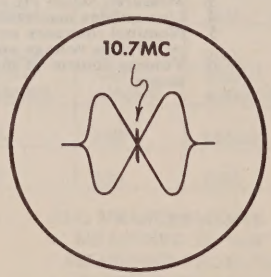


FIG. 2